

# The National Locksmith®

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**CODES:**  
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July 1994  
Volume 65, No.7



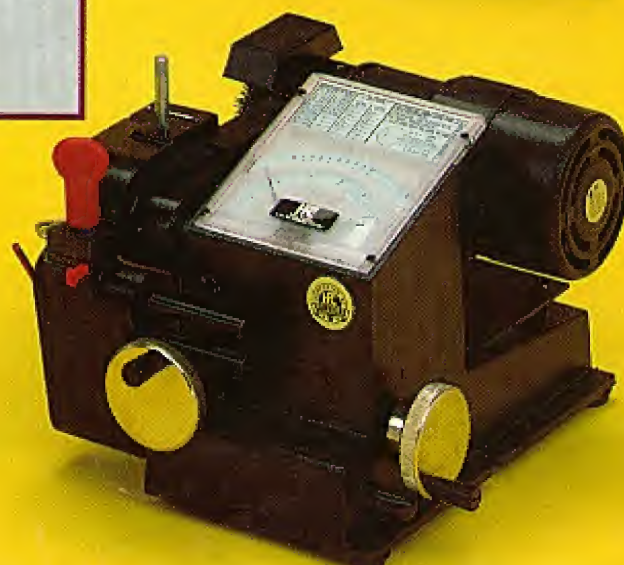
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you wish to read**

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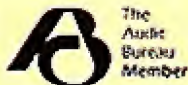
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# COMMENTARY

## ***Locksmiths: To License . . . Or Not To License?***

I don't know how many times I have written on the subject of licensing laws for the locksmith. Over the years, I have probably written a dozen *Commentaries* on this very subject. If you counted them up, I am sure you would find that just about all of them were against licensing laws.



Marc Goldberg  
Editor/Publisher

However . . . I have to admit that I am changing my tune. Originally, I believed that a locksmith license would just be another excuse for the government to tax us. Nor did I much like the idea of Big Brother watching over our industry. I've always said that a government which pays \$600 for a hammer, shouldn't be allowed to stick its nose in locksmithing.

The reason I have changed my mind is simple. It looks like if we do not have a coherent effort at regulating our industry, someone else is going to do it for us. Or worse yet, other industries will pass regulations that make it impossible for a locksmith to do his or her job.

Other professional groups like the alarm industry have taken a lot of time and trouble to get themselves regulated. Now that they have done so, they seem to be busy scaring up new business by attempting to regulate the locksmith out of existence. Alarm lobbies in some states have attempted to pass laws that would even make it illegal for you to install an alarmed exit device.

The time to take action is now. We must exert control over our own future before it is done for us. Provided that locksmith associations are lobbying for licensing, I believe the effort will pass in many states. If you don't want someone from outside our industry to determine who is and who is not a locksmith, then we must do the job ourselves.

Now, of course, this means that we must be banded together in the form of associations in order to lobby effectively in our own state capitals. Many locksmiths do not belong to any association and take pride in their independence. I think this is a

luxury that we will not be able to afford much longer. If there is strength in numbers, then what are we when we stand alone? Vulnerable!

The first step in protecting our trade for ourselves and for our customers is to join up with your local association or ALOA chapter. Remember, these associations do not exist to tell you what to charge or how to run your business. You are an independent business person. You have your own mind and your own opinions. I never met a locksmith worth his or her salt who didn't.

But when you call your state representative to talk about a concern, good luck getting through when you represent the AAA-1 Lock Shop. However, when you call to talk to your state rep as a member of your local association—one of 150 local members—all of a sudden you have *clout*!

We have to start using that clout to get locksmithing regulated *by* and *for* locksmiths. What do you think?

Well, this month brings many of us to the glitter and glitz of Las Vegas for the annual ALOA convention. There sure will be plenty to see and do this year in Vegas. Having visited recently with many manufacturers, I can tell you that there are a lot of interesting products to be introduced at the show.

We look forward to visiting with you at *The National Locksmith* booth. (Booth 527.) Be sure to drop by because we'll have a surprise in store for you.

There is only one sure bet in all of Las Vegas this year. And that bet is that ALOA will be a winner for us all!

See you at the show.

*Marc Goldberg*



# LETTERS

## Comments, Suggestions and Criticisms

*The National Locksmith* is interested in your view. We do reserve the right to edit for clarity and length. Please address your comments, praise, or criticism to Editor, *The National Locksmith*, 1533 Burgundy Parkway, Streamwood, IL 60107. All letters to the editor must be signed.

### Illinois Licensing Denied

Dear Marc,

The four Locksmith Associations in Illinois have sponsored a Locksmith Licensing Bill. Our bill did not get enough votes to pass out of the House of Representatives. The main reason it didn't pass was the Governor's office sent word to the floor that he opposes licensing Locksmiths. His orator said this was another licensing bill presented by a group trying to protect their jobs. He said this was not supported by the public. He told the Representatives to stop wasting their time on this and get on to the important business they are supposed to be doing. After his verbal attack the vote was 47 yes and 62 no.

We need the help of Locksmiths across the country. We need to show there can be a dangerous problem when anyone, even a convicted criminal, can be a Locksmith. We must have documented stories about "Bad Locksmiths." Copies of newspaper articles or any other public records are needed. We have information on four cases in Illinois, but, several more are needed to get attention.

If you have any information on bad locksmiths please send it to GCLA/Allied Locksmiths for Illinois, 6216 W. North Ave., Chicago, IL 60639, FAX 708-366-2094.

Thank you for helping us collect this information. We will gladly pass the information along to other states as the need arises.

Kathy Zaniolo, CPL.  
Pres. Greater Chicago  
Locksmith Assoc.  
Chicago, Illinois

### An Eye For Licensing

Dear Marc,

Just a word about licensing locksmiths.

I'd like to see it go much further. I believe every locksmith should be a graduate of an approved school, have a criminal background check, and be bonded. If not a graduate of an approved school, they should be tested.

To most folks a license means a professional. I don't necessarily agree with that statement. But I do believe it shows we have some knowledge of the profession.

We do need licensing. Think about it, other professionals encourage licensing. Maybe if locksmith training and tools were limited to people who have underwent a background check it would reduce crime a bunch.

Ed Hamm  
Illinois

### Reader Wants New Titles

Dear Marc,

Please sign me up for the NSO certification program. I am very interested in this. However I feel that the two highest titles are inappropriate for our profession. I feel that safecracker is not a good title to be associated with honest professionals. It brings to mind a picture of someone with dynamite in hand, ready to blow up a bank vault or something along those lines.

I would rather have seen Technician put in place instead. I feel that Certified Master Safe Technician sounds a lot more professional.

Enough bickering please enroll me in the first step of your program.

Also thank you for such a wonderful trade magazine and book program. Your safe books have made life a lot easier around here in the last year or so.

James Amundson  
California

*Editor's Note:*

*(Jim we sent your letter on to Dave McOmie for a reply.)*

*Good question Jim. Here is the rationale: There are two goals behind NSO certification. The first is to create better technicians. If our tests succeed in getting people comfortable with doing a little research and becoming more knowledgeable about their trade, then this goal is accomplished. The second goal is to give those who pass the tests a marketing tool to make them more visible in the public eye.*

*This is where the designations come in. Terms such as "Safe Technician" and "Safeman" are understood by those of us in the trade; in fact, most industry writers (including this one) use them all the time in articles intended for in-the-trade consumption. But ask somebody who isn't in the trade what a "Safe Technician" or "Safeman" is, and they will be clueless.*

*In my own research, people have guessed things like an "OSHA inspector", and "AIDS laboratory technician", someone who is "careful when they work", and so on. In other words, "Safe Technician" and "Safeman" mean absolutely nothing to the public.*

*By contrast, tell someone you are a "Safecracker" and they know immediately what you do. You might have to explain that you crack safes legally, but noone, I mean noone, will think you are an OSHA inspector or an AIDS researcher.*

**Continued on page 10**



**Continued from page 8**

*So why did the NSO use "Safe Technician" for Level One? Because the Level One test covers only the basics: combo changing, servicing and troubleshooting. Mastery of these areas does not require expertise in safecracking. A Registered Safe Technician has not been tested for safecracking expertise, and thus has not earned formal recognition in that area. Testing for safecracking expertise takes place in Levels Two and Three—the tests for the Certified Journeyman Safecracker (CJS) and Certified Master Safecracker (CMS).*

*Lastly, the impact on the public: Imagine two yellow-page ads, one saying "safes-opened and repaired" (which is how most current ads read), the other boasting the services of a "Certified Master Safecracker." Which do you think will generate more safe opening calls? Goal number two accomplished. Thanks for writing!*

Dave McOmie  
NSO Director

## Master Additions

Dear Marc,

Giles Kavelage's article "The Master Lock Door Knob" in the May issue was read with a great deal of interest. We compliment you on the rekeying instructions and illustrations - well done!

We are providing you the following information to clarify a few points made in the article.

1. He advised that an adjustable latch is available for box pack in place of the standard 2-3/8" backset latch. There is also a fixed 2-3/4" fixed backset latch available.

2. Our latches will fit a 15/16" edge bore, not a 7/8".

3. To save time, the rose can be snapped over the mounting plate when properly positioned. The turn feature is designed to facilitate removal rather than installation.

We appreciate your time and efforts.

Duncan Gilchrist  
Manager Product Engineering  
Master Lock Company  
Wisconsin

## High Tech Means More Than Profit

Dear Marc,

Just read "Seein Through Doors" by Jake Jakubowski about the Aiphone MYS-ICO and C-123LP. (*The National Locksmith*, May 1994.)

I know that this new high-tech device means more than profit. Being a member of my neighborhood watch team, I know that this device will eliminate fear, crime, and give better coverage of a possible violator/intruder. Knowing that these things do happen, I commend and welcome to our market this new security monitoring system. One other thing from a Crime Prevention standpoint: "Watch out thug, I got you."

Willie B. Bowen  
Virginia

## Locksmith Vs. Government

Dear Marc:

I have for some years now listened to and read numerous stories of the ongoing dilemma of State, County and Municipal governments selling locksmiths a license, collecting taxes and otherwise interfering in the operation of their business. I have and do yet gripe, groan and growl over this injustice. The purpose of this letter is to inform those of you who don't know or haven't tried to resolve this matter of the process I went through from the bottom to the top.

I started with the city, approaching one of the council members, who is a banker. Explaining to him how it cost the entire community a great deal more for a policeman to open a car than it did if a locksmith opened it. This Councilman went to City Hall; pulled the records, did a serious study of the numbers, cost in man-hours, vehicles out of service, and types of criminal activity committed at times when officers were involved in opening cars, etc.

He was astounded at what he found. Then I explained to him that the police were also breaking the law by opening cars. He succeeded in getting the City Council to issue an order to the Police Department to cease and desist.

I next approached the County Sheriff, a very forward person, and I used the same manner and asked him when he was going to start obeying the law as well as enforcing it. His reply was I don't give a damn about the law. I'll do what I want.


Next, I called the States Attorney General's office, YES! you are correct on the point of law! State Attorney General being the chief law enforcement officer of the state, I've hit pay dirt! RIGHT? Wrong! Will he try and convict other politicians! OH, NO! We couldn't tell another law enforcement officer under our jurisdiction to obey the law sir! It would be best for you to file a law suit. This only causes the taxpayers more money. Exactly what we are trying to avoid!

Well, I have another option, file a complaint with the U.S. Attorney. OH, I'm sorry sir but we do not have anyone in our office that knows anything about the U.S. Trade laws, but we will give you the phone number of the counsel at the U.S. Trade Commission office in Washington. They should be able to help you.

One Ringy Dingy! OH! NO sir! I'm sorry but, I will give you the number of the Bureau of Competition! O.K. and thank you! Three ringy dingys! I'm sorry sir but there is no one in now, I will have them call you back. Days later, well sir, big horse laugh, that's not an enforceable law! Yes, it is a law but it's not enforceable sir.

They can't do anything about the drug problem, they can't do anything about the rising crime rate across the nation, but they will take the gun you use to protect your family, yourself and your property and yes they want your taxes! But we can't help you, we are busy opening cars. Or, using the National Guard to clear the land for a new Mercedes Benz plant down in Alabama. OH! Yes we are going to provide the money to hire 150,000 more police officers and issue each of them a car opening tools!

Take heart locksmiths! You can always vote!

Troy E. Tuell  
Alabama 





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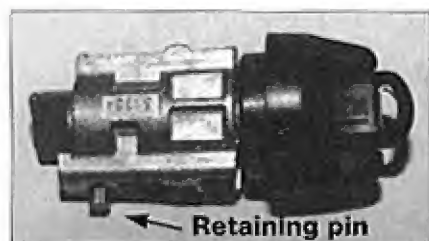
by  
**Tom Mazzone**

## AABLE GM PICKS

*"Aable has developed a well designed tool to pick this new style ignition."*

General Motors has handed the locksmith still another marvel of engineering to contend with in their "N" body vehicles for 1994. This nine wafer, sidebar lock is installed in the Pontiac Grand Am, Oldsmobile Achieva and Buick Skylark.

The lock cylinder is not retained in the upper shift bowl by a bolt but has a square, spring loaded retaining pin that holds the lock in the housing. The lock needs to be in the "ON" position to expose a relief in the plug allowing room for the retaining pin to be depressed. Without the correct key to turn the ignition lock to "ON," the lock cannot be removed without damage. It seems that GM has once again thrown a chink in the locksmith's armor. (See photograph 1.)



1. The 1994 GM 10-cut system ignition has nine wafer tumblers. The plug must be turned in order to depress the cylinder retaining pin.

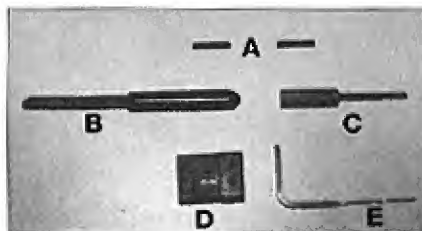
Wafer positions one through nine are in the ignition lock unlike the six wafer GM system in years prior. In addition to this change, a false gate as well as the true sidebar "V" notch has been machined into each wafer. These false gates have greatly improved the cylinder's pick resistance.

Enter Frank Markisello Aable Locksmiths of Ozone Park, New York. Frank has brought us slick tools such as the Ford Quick On, the GM Side Kick, the Persuader, and the Ford Disc Out just to name a few of his inventive products.

Now, Frank has developed a well designed tool to pick this new style

ignition to the "ON" position for either replacement, code retrieval or direct reading to generate a first key.

The tool is very well packaged in a plastic case with a foam pad liner. It is complete with a drill guide, a drill bit with arbor, specially designed tension tool and a wafer depressor. There is also a supply of plastic plugs to fill in the drilled hole. Complete instructions with photos are also included. (See photograph 2.)



2. Aable locksmith's 1994 GM 10-cut pick set includes (A) plastic plugs, (B) wafer depressor, (C) drill bit and arbor, (D) drill guide, (E) tension tool.

To begin, insert the drill guide into the keyway with the guide hole facing you. This aligns the drilled hole in perfect alignment with the sidebar. Drill through the face of the lock until the arbor stops at the guide block. You now have a hole that will allow the tension tool to enter the sidebar broaching. (See photograph 3.)



3. Drill guide and drill in place.

The specially designed tension tool will slide completely into the broaching and has a stop milled into it to contact the lock face. Once this has been inserted, insert the wafer depressor into the keyway fully, and making sure that the beveled end of the depressor is facing the bottom of the keyway. (See photograph 4.)



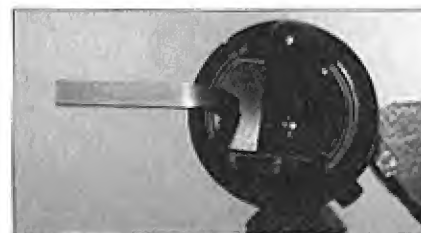
4. After drilling the access hole through the facecap, place the tension tool into the hole and insert the wafer depressor into the keyway.

While putting a slight amount of pressure in a clockwise direction on the tension tool, push down on the depressor in such a way that all the wafers come down together. A gentle rocking motion will help speed results.

Keep in mind that locks with subtle changes in their bitting will yield quicker than locks with greater variances: e.g. if lock A has bitting 112221233 and lock B bitting 124213421, lock A is more likely to pick faster than lock B. While all the locks we tried were picked, those with greatly varied bittings demanded a little more time and patience.

When the lock is picked the tension tool moves slightly. This is the sidebar engaging the "V" notch in the wafers. Take caution because the sidebar can also engage the false gates. The difference can be seen in the position of the tension tool.

When the tension tool is first inserted it is at the nine o'clock position in relation to the keyway. (See photograph 5.) When the lock is



5. The tension tool position when first placed in the lock.

*Continued on page 14*





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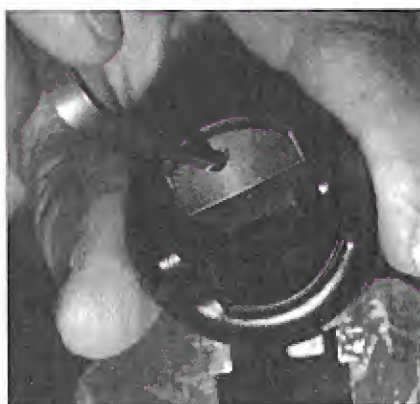
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6. When picked, the tension tool moves to approximately the 11 o'clock position.

picked, the tool is approximately at the eleven o'clock position. (See photograph 6.) If, after a small amount of raking, the tension wrench does not move this far, you can assume the sidebar is hanging up on one or more false gates and it is best to release the turning pressure and start again.

Once the sidebar is fully depressed, turn the ears of the ignition toward the "ON" position to trap the sidebar in the lock shell. Remove the tension tool and proceed to the "ON" position. The retaining pin



7. Once picked, apply slight turning pressure on the ignition while gently removing the tension tool.

can now be depressed for lock removal. (See photograph 7.)

If the original lock is to be reused, the kit has plastic plugs included that fit tightly into the drilled hole, making the repair unnoticeable after a little finish sanding with fine paper. These plugs are cut a specific length – *Do not cut them shorter!* The length of the plug prevents the spring loaded detent pins from pushing up into the drill hole and jamming the lock. (See photograph 8.)

The tool requires some practice at first before using it in the field. It is




8. After inserting the plug, use a fine grade emery cloth to finish the job.

extremely well designed and its effectiveness is excellent. While this author's first attempts were unsuccessful, I found that this was due to operator error (mine), not the fault of the tools.

In closing, I can only add that good tools are a must if you are going to continue in this business. This tool is one that I would definitely add to my arsenal.

For more information, contact: Aable Locksmith, 91-10 Liberty Ave., Ozone Park, NY 11417, 718-847-1377.

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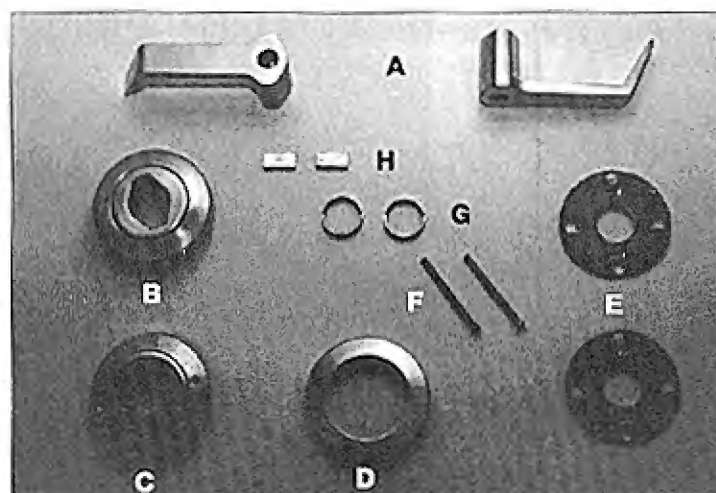
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## I'VE BEEN CONVERTED

*"Lori Lock offers a new kit for turning the Schlage D series and Arrow H series knobsets to leversets."*

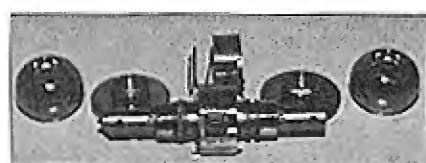
There are very few options to replacement when it comes to converting cylindrical knobsets to leversets. Often replacement is quite expensive, especially when trying to retain a Grade 1 standard.



1. Components of the Lori Lever Conversion Kit: (A) Levers, (B) Exterior Rose Cassette, (C) Interior Rose Cassette, (D) Rose Scalp, (E) Mounting Plates, (F) Thru-Bolts, (G) Mounting Nuts, (H) Bibles.

A new option to replacement is the 2100 and 2200 ADA Lever Conversion kit from Lori Lock. This kit allows conversion of the Schlage D series and Arrow H series knobsets by replacing the existing exterior trim (the roses and knobs) with heavy duty spring cage roses and lever handles. The conversion is quick, less expensive than purchasing new equipment of the same grade, works with all functions and allows the use of the existing cylinders. This kit does not work with Schlage or Arrow Grade 2 knobsets.

The kit consists of 15 parts: (2) Bibles, (2) Rose Cassettes, (1) Rose



2. Remove all trim from the Schlage D series chassis.

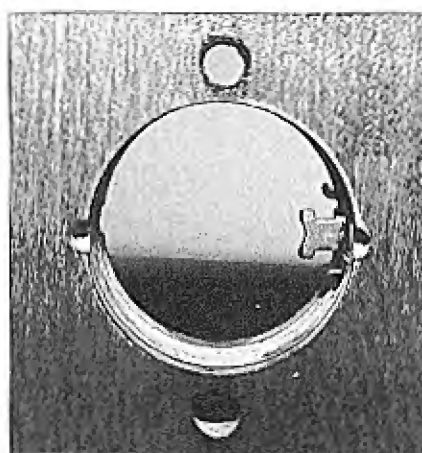
Scalp, (2) Mounting Plates, (2) Mounting Nuts, (2) Filler Caps, (2) Thru-bolts, (2) Levers. (See photograph 1.) The Rose Cassettes are actually large spring cages to ensure proper lever return and hinder lever

sag. The interior cassette comes in two parts, the cassette and the Rose Scalp, while the exterior cassette is one unit. The Filler Caps are used to fill in the cylinder and button holes on the lever handles for functions that do not require locking.

### CONVERSION

To convert the knobset, remove the knob handles, the rose bushings, the interior and exterior rose, and the outside rose spring and spring cover. (See photograph 2.)

Place the kit template on the door



3. Use the template to mark and drill the necessary mounting holes.



4. Place the mounting plate over the chassis and tighten the mounting nuts. A Schlage tool will work well. Make sure the chassis is centered in the door.



5. Attaching the Rose Cassettes.



6. Attaching the Rose Scalp to the interior Rose Cassette.



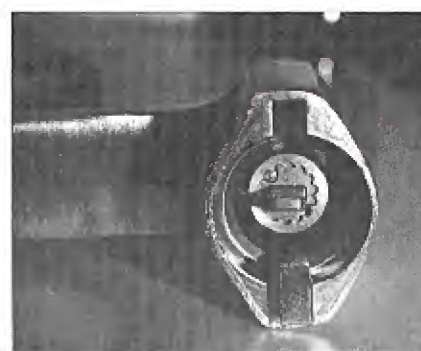
and drill the necessary mounting holes. (See photograph 3.)

Place the knob chassis on the door. Slide the mounting plates over the spindles and fasten with the mounting nuts. Make sure the metal tabs of the mounting plates are facing into the door. Tighten the mounting nuts, making sure the knob chassis is centered on the door. (See photograph 4.)

Place the Rose Cassettes into place and use the Thru-bolts to fasten them to the door. (See photograph 5.) Make sure the interior cassette is on the



7. Insert the Bible into the slot of the inside lever and attach lever to inside spindle.



8. Insert the second Bible into the outside lever, below the cylinder, and attach to outside spindle.



9. Placing outside lever on spindle



10. The lever conversion completed.

inside of the door. Place the Rose Scalp over the inside cassette. (See photograph 6.)

Insert Bible into the slot of a lever handle and place it onto the inside spindle making sure it engages with the handle retainer. (See photograph 7.) The Bible must align with the open slot of the spindle or the lever will not slide onto the spindle. If there is no lock button, make sure to insert the filler cap into the lever first.

Insert the lock cylinder and Bible into the outside lever handle. (See photograph 8.) Slide the handle onto the spindle until it stops. Turn the key approximately 1/4 turn and push the handle until it engages with the handle retainer. (See photograph 9.)

You're done! (See photograph 10.)

The Lori Lock 2100 and 2200 (for IC core) Conversion Kits can be obtained through any Lori distributor.



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# SHOWSTOPPERS

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## ACCESS CONTROL, ALARMS & CCTV

### Gyrr's Time-Lapse Recorder With 16 Camera Digital Multiplexer

Gyrr will introduce a time-lapse recorder with a built-in 16 camera digital multiplexer at ISC West '94. Called the TLC1800-DS16, the new recorder is priced 30 percent below the cost of a two-unit system with comparable specifications. It is fully-color compatible.

Based upon Gyrr's DigiScan digital switcher technology, the TLC1800-DS16 accepts 16 non-synchronized video cameras and records them into a VHS format. Upon playback, users can review all 16 cameras sequentially, or they can call up each camera individually.

For maximum resolution and image clarity, the 1800-DS16 features 500 horizontal



x 456 vertical pixels per frame, 256 levels of gray and full spectrum color (16.8 million colors). The recorder also includes simultaneous video/data display during text insertion from ATM's or electronic cash registers, plus the ability to treat data as an alarm. A seven-day programmable timer with six start or stop times and variable speeds plus two

programmable alarm outputs, provide maximum programming flexibility.

Programming is accomplished through on-screen menus using controls located on the unit's front panel. All instructions for selecting record/playback camera switching, dwell times, alarms and camera titles are on-screen menu driven.

Circle 450 on Rapid Reply

### Cardkey Systems' New S300 Security Management System

Responding to market demands for cost-effective system expansion capabilities in the small to mid-range access security market, Cardkey Systems, Inc. has introduced the new Systematics S300. The S300 is a powerful, low-cost system for the 1 to 8 reader access control market. The System's expandability to eight readers from a single panel, plus the ability to operate with or without a PC, sets it apart from competitive offerings.

The S300 offers a host of features and options that include multiple programming options (personal computer, video display terminal or keypad/LCD); 5,000 card capacity (expandable to

10,000); 2,500 transaction storage capacity (expandable to 5,000); extended-life memory backup, unlimited facility codes and much more.

Most card readers, keypads and combined card/keypad readers are compatible with the S300. In addition, Magnetic Stripe, Wiegand, and Proximity card technologies are all capable of being used with the system and it is compatible with open format and Cardkey proprietary card technologies without the use of any special modules or converters.

Circle 449 on Rapid Reply

### Frame Software Interfaces For Access Control

The introduction of the System 500-series TechniCode access control system has been followed by the development and release of several software interfaces. These interfaces allow other programs such as accounting or time-and-attendance software to send data to, and get data from, the Frame system. They also allow spreadsheet or word processor users to import or export access system data. The interfaces are offered both by FRAME Inc. and several accounting software vendors.

The options available directly from FRAME Inc. include the import and export options. The import option allows the operator to program the access control system with spreadsheets,



databases, and similar software. Sign-up sheets, account files, etc. can therefore be used as input forms. The export option allows the operator to put information regarding user access activity into disk files. From there, the information can be integrated into spreadsheets, data bases or other software. It can then be used to calculate work hours, usage time, etc.

In addition, there is a programming interface to allow designers of other software to tie directly into the access control system. Deemed an "elementary programming task," the interface is claimed to require only a few hours of coding in order to function. The programming steps and a sample program are included on every program and demonstration diskette shipped by FRAME.

Circle 448 on Rapid Reply

### Securitron Introduces Radio Transmitter Interface To Access Control Systems

Securitron introduces its new Radio Access System. The system consists of pocket size radio transmitters and corresponding receiver. The transmitters are able to

*Continued on page 20*







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*Continued from page 18*  
send uniquely programmed digital access codes to the receiver which in turn connects to any brand of access control system and enters the code to the system the same way a card



reader would. Securiton's system allows long range access (approximately 60 ft.) and is therefore ideal for vehicular access to home or industrial complexes. The access control system opens the gate and logs authorized entry just as it would with a standard card reader.

The new Radio Access system joins Securiton's successful Infrared system so that a choice of transmission technologies now exists which allow the user to select the best technology for the installation.

See us at Booth 0706  
Circle 447 on Rapid Reply

**Apex Security  
Alarm Products'  
SR-201 Wireless  
Receiver And  
WKP-21 Hand Held  
Wireless Keypad**

Based on the results of a ninety day RF review project, these the SR-201 wireless receiver and WKP-21 hand held wireless keypad incorporate hardware and software modifications which increase range and performance while further reducing potential environmental "noise." These improvements are part of the ongoing Apex commitment as the leader in quality and advanced technology.

Circle 446 on Rapid Reply

**Free PointGuard  
User's Guide  
Available  
From Litton**

PointGuard from Litton Systems, Inc. is designed to provide access control and alarm input capabilities by combining only the modules required to meet a facility's specific needs. The system's modular design incorporates LonWorks technology from Echelon which utilizes a Neuron chip. The Neuron chip is included in the door control modules, as well as the keypad and card readers, providing intelligence at each door.

The User's Guide tells you what you need to know about setting up a PointGuard system beginning with the components needed for each application. This informative brochure provides useful information to the installer and the system manager about configuring a single door or multi-door system or adding a door to an existing system.

We've included programming information for the installer and system manager, as well as diagrams on wiring and power supplies.

Litton Poly-Scientific is a technology-based company specializing in security systems, fiber optic products and motion control systems.  
Circle 445 on Rapid Reply

**American  
Dynamics'  
New Dual-Channel,  
Digital Video Motion  
Detector CCTV**

American Dynamics has introduced the new AD1562 "DuoTect-C" dual-channel digital motion detector for B&W or color CCTV for security and surveillance. The "DuoTect-C" provides motion detection for two cameras, and offers features typically found in more expensive



motion detection systems at a fraction of the cost.

The "DuoTest-C" offers three detection modes. A direction mode allows for motion in one direction and alarms on motion in the opposite direction. A guardian mode stores a user-defined image (e.g. a parked car, a museum piece, etc.) in memory and alarms if the live image moves or is obscured by a selectable amount. A dynamic mode initiates an alarm on motion in an activated detection zone.

Multiple alarm actions include on-screen lighted tracers and flashing LEDs for visual alert, as well as an audible tone. Individual channel closures and a master alarm closure are provided for activation of auxiliary devices. For additional alarm handling, an RS0232 port is provided for interface with an AD matrix switcher/control system.

The unit provides on-screen programming, has password protection to limit system access and initiates an alarm if loss of video sync occurs.

Circle 444 on Rapid Reply

### Safeguard Innovations Pool Alarm

Answering a growing demand for door alarms, "Access Alert" meets all the specifications of the "Uniform Building Codes" in all States and communities that require a secured door that opens onto a area with a swimming pool. It emits a 100 dB pulsing alarm when the door is opened by a youngster. Standard unit uses a 9 volt battery, chirps when low, and lasts at least one year. Access Alert is available in wall or flush mount versions and fits either sliding or traditional swinging doors.

Circle 443 on Rapid Reply

### Full Product Line KingAlarm Catalog Available

The new, 140-page, KingAlarm 1994 Products Catalog contains listing for



over 12,000 products from 175 leading manufacturers, complete with stock numbers, a brief description and reference pricing. The contents reflect KingAlarm's wide range of systems products and include fire alarm, CCTV, communications/intercom, sound systems, access control, telephone, central vacuum, CATV, wire and cable and all essential accessories along with extensive security equipment listing. The catalog also provides a brief overview of KingAlarm, its capabilities, services and policies along with a credit application and special discount offer for new customers of KingAlarm.

Circle 442 on Rapid Reply

### ELECTRONIC HARDWARE

### Locknetics' Pentagon 100 Series Electromagnetic Security Systems

Locknetics Security Engineering, has recently introduced the Pentagon 100 Series a microprocessor-based system that combines access control and electronic auxiliary locking.

A new generation of five locking devices, the Pentagon 100 Series has been created specifically for maximum entry and egress control. Each unit provides onboard logic and microprocessor control interfacing with Locknetics' TouchEntry access control reader.

The Pentagon Series features five locking systems with 1500 to 1650 pounds, holding force. Each model accepts up to two TouchEntry readers for ingress and egress.

All five Locknetics' Pentagon units offer superior integrated design, reduced installation costs, and the versatility to meet security applications in most



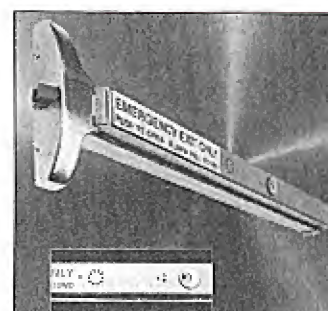
institutions, corporate facilities, and commercial/industrial buildings.

The Pentagon's onboard access control memory stores up to 150 unique user codes. Buffer memory records the most recent 100 transactions for an audit trail record of user, location, date and time, as well as other management selectable audit activities. Retrieve, record and print information with a Computer Interface Pack and a Hewlett Packard 100 LX palmtop or any DOS based laptop.

See us at Booth 0660  
Circle 441 on Rapid Reply

### Battery Alarm Exit Device Bulletin From American Device

A two-page technical bulletin describes the new battery-powered alarm exit device introduced by the



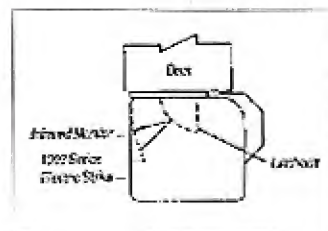
American Device Manufacturing Co. The alarm feature is available on the company's 4000 Series, 6000 Series and 8000 Series panic and fire exit device lines.

The bulletin provides information regarding both features and operation of the alarm.

Circle 440 on Rapid Reply

### New H.E.S. Infrared Monitoring System

The new OPTOSENSING Monitoring System brings the technology of infrared detection to the 1003 Series electric strikes. This system provides latchbolt, deadbolt and strike locked condition monitoring, utilizing an invisible infrared light beam. The monitors have no moving parts that can wear out, providing years of trouble-free dependability. To reduce the possibility of tampering, the system uses a special reflection principle. Each of the three monitors are



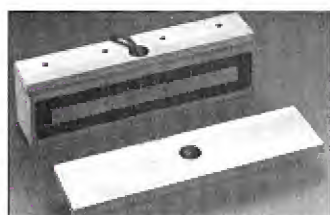
designed to only look for their intended target. This eliminates the chance of sending a false signal when foreign objects, such as paper or gum, are placed in front of the sensors.

See us at Booth 0653  
Circle 439 on Rapid Reply



### Door Controls International 1400 Series Electromagnetic Lock

Dramatically different, all-new electromagnetic lock is enabled by proprietary design. 1200 pound holding force in only 8-3/4" by 2-1/2" profile, yet short 1-3/4" depth fits standard frames without



fillers. A proprietary bracket eliminates measurements and templates for easier mounting.

Exclusive, precise, bond-sensing options are contained within the bracket, not the magnet. Only one

magnet model required; non-handed, dual-voltage, pull or push side, any option. Built to ANSI/BHMA specs. Accessories also available.

UL Classified to ANSI/BHMA A156.23, UL Listed Releasing Device, UL Listed Auxiliary Lock, all for exterior and interior use.

See us at Booth 0360  
Circle 438 on Rapid Reply

### Trine Brochure Describes New Heavy Duty Strikes

Trine's new line of "EN" Strikes is shown in literature containing full information on three models. The UL-listed, all stainless steel strikes provide 2,000 pounds holding force, a patented rectilinear



locking mechanism, 500,000 life cycle durability and field selectability. A cross-reference lockset compatibility chart is included.

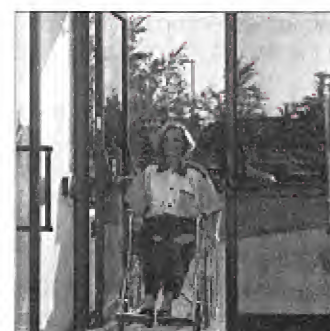
See us at Booth 0460  
Circle 437 on Rapid Reply

### DOOR CLOSERS & POWER OPERATORS

### GT System 700 & 710 Gemini By Gyro Tech

The GT 700 and GT 710 Gemini entrance systems by Gyro Tech eliminate access challenges encountered by those unable to operate cumbersome manual doors. Both systems provide affordable solutions to accessibility for the physically challenged.

These systems are built with solid-state electronic controls and operate in both automatic and manual modes. The GT 700 is a



compact 32" while the GT 710 is 36". Both can be easily surface mounted to existing doors.

In addition, both units feature a 0 to 60 second hold-open range, an automatic "recycle" feature to stop and reverse the door direction when a pedestrian obstructs the passageway, and a "push'n'go" feature to automatically open the door completely when activated by the pedestrian.

In the manual mode, the GT 700 system closes slowly upon release to guarantee safe passage. The GT 710



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has an adjustable door closer which adjusts the tension of the closing pressure.

Both systems ensure easy, low-maintenance operation and can be used in a variety of environments including health care facilities, hotels, restaurants, supermarkets, malls and others.

All features, components and accessories meet the access requirements of ANSI 156.19 for the physically challenged.

Circle 436 on Rapid Reply

## DOOR HARDWARE

### S. Parker ADA Compliance Hardware Display Program

Chuck Silberman, President of S. Parker Hardware Manufacturing Co. announces its ADA door hardware program, a complete display that provides a single source for all ADA compliant door hardware. The 36" x 24"



display includes samples of a barrier-free door closer, heavy duty Grade 2 leverset, reversible rim touch bar panic exit device, and an optional UL-listed heavy duty ball knob lockset with spin on roses.

The Americans with Disabilities Act is a Federal civil rights law, aimed at removing barriers, thus letting people with disabilities get equal access to as many places of their choice as possible. Compliance means retrofitting door hardware; the S. Parker Door Hardware

program is designed to provide a retrofit line that addresses the requirements of the law and adds to locksmiths' profits.

Barrier removal includes installing leversets, door closers, and other door hardware that leads to easier use of entrances and exits. Stores, locksmiths, contractors and others gain customers, good will, and employers gain the services of productive employees, by supplying the needed hardware quickly, efficiently and at a reasonable cost.

In addition to the closers and leversets, S. Parker offers a wide line of touch bar panic/exit devices, including narrow stile versions. Also for narrow stile aluminum glass door uses, S. Parker has push and pull paddles and a lever handle to pair with their Narrow Stile latches.

S. Parker fashions their devices to make sure all doors retrofitted with their hardware satisfy ADA requirements. Each product comes with a full warranty.

See us at Booth 0474  
Circle 435 on Rapid Reply

### Corbin Russwin Introduces The CL3800 Series Standard Duty Cylindrical Lever Lockset

Corbin Russwin introduces the new economy-priced Grade 2 CL3800 Series standard duty lever lockset. The lockset is designed to meet operational, security and finish standards as well as code requirements with full compliance of ANSI A117.1 Accessibility for the Physically Handicapped. Aesthetically pleasing in a wide range of architectural finishes, it is ideal for new or retrofit light commercial and heavy duty residential applications. The CL3800 Series joins Corbin Russwin's complete family of



lever locks, the CL3400 Extra Heavy Duty and the CL3600 Heavy Duty—all providing outstanding value and performance.

Solid levers are standard on the CL3800 Series with no plastic appliques riveted to the lever. Independent return springs prevent lever sag and an interlocking tubular chassis and latch bolt design provides alignment for strength, durability, and smooth operation.

The CL3800 Series is compatible with existing Corbin Russwin 6 pin key systems. In addition, several options are available, including a high security cylinder, construction master keying, visual key control, Corbin Russwin

interchangeable core, and competitive cylinder compatibility. The CL3800 Series is available through a nationwide network of authorized Corbin Russwin distributors.

Corbin Russwin Architectural Hardware is a full line supplier of Locksets, Exit Devices, Door Closers, and Key Systems.

See us at Booth 0546  
Circle 434 on Rapid Reply

### Master Lock's New 1-5/8" Bore Single- Cylinder Deadbolt

To meet the demand for high-security deadbolts in the popular 1-5/8", Master Lock has introduced a new product that complements its full line of Grade 2 deadbolts.

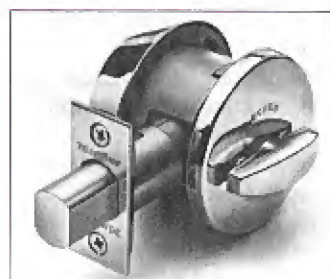
A common replacement size, the new 1-5/8" Master Lock single-cylinder deadbolt can be keyed to match Kwikset, Schlage, Weiser, National or Dexter

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door hardware.

Master Lock deadbolts are engineered for superior ability to resist all forms of lock violation—twisting, turning, pulling, prying and pounding. They are available in a choice of Bright Brass, Antique Brass, bright Chrome or Satin Chrome finishes.

See us at Booth 0320  
Circle 433 on Rapid Reply

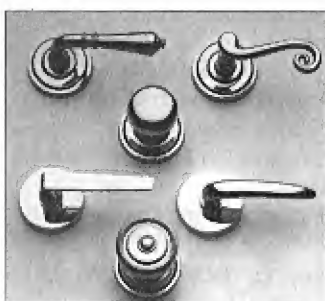
### The Builders' Selection By Omnia

Omnia Industries, Inc. offers a re-grouping of six of the most popular designs in its line of interior latchsets and lowered their prices in response to the realities of

today's economy.

The Builders' Selection offers sensibly priced, solid brass knob and lever latchsets, in both traditional and contemporary designs. These popular designs retain the high quality which has been Omnia's standard for over thirty years. The grouping provides the builder/remodeler and locksmith with the solid brass details that make the difference.

The latchsets in The Builder's Selection feature through-bolted, concealed



screw roses and tubular latches of superior quality. Available finishes are polished brass, polished chrome, satin chrome and shaded bronze. Each of these styles is hand polished and highly buffed before being protected by a durable, baked-on lacquer finish. It is because of this special process that Omnia's finishes are long lasting.

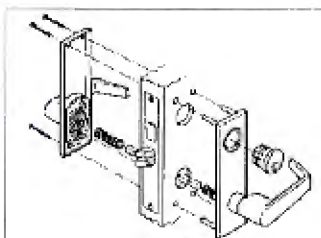
All popular functions are available: passage, privacy, closet, single dummy and pair dummy. These latchsets are designed for both new installations and for replacement hardware on doors with a standard bore up to 2-1/8". Backsets of 2-3/8" and 2-3/4" are available.

Omnia offers immediate, in-stock availability on all of the latchsets of the Builders' Selection.

Circle 432 on Rapid Reply

### NT Falcon's New Re-Lever Kits

NT Falcon Lock, a subsidiary of Newman Tonks Group, has created Mortise Lock Re-lever Kits that



replace most manufacturers' mortise knobs with a Falcon lever in ten minutes or less. The easy three-step process provides locksmiths and their customers with the quickest, most cost-effective solution to meeting ADA requirements.

Installing a NT Falcon lever on an existing mortise knob lockset does not require the removal of the locking unit. Falcon Re-lever Kits were specifically designed to adapt to other manufacturers' locking units.

See us at Booth 0701  
Circle 431 on Rapid Reply

### SPECIALTY LOCKS

#### National Cabinet Lock Multi-Cam Locks

National Cabinet Lock has Multi-Cam mail box locks furnished with five cam configurations to fit most popular interior and exterior locking mail boxes.

The C8730-14A lock is designed for interior architectural mail boxes used in apartments, condominiums, schools and lobbies. This nut-mounted lock, with 100-change capability, uses a counterclockwise cam turn to open.

Each lock is furnished keyed differently and is packed with five different cams, two keys, a "sems" cam screw and instructions.

The C8735-14A lock is for exterior, pedestal-mounted neighborhood boxes. A keyway dust shutter protects the mechanism from the elements. The lock has dual slots for mounting in the door using a spring clip. A clockwise cam turn opens the lock.

Each unit, engineered with 100-change capability, is furnished keyed differently with three keys, five different cams, a cam nut, lock washer and instructions. National Cabinet Lock is a leading supplier of quality security devices.

See us at Booth 0633  
Circle 430 on Rapid Reply

#### Wilson Bohannon Solid Brass Meter Locks

Specialty products and services have been a way of life at the Wilson Bohannon Lock Company in Marion, Ohio, since 1927. The Single Post Solid Brass Meter Lock has been carefully designed to function as a locking device for hard to lock valves

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and levers used in refineries, distilleries and by maintenance people for underground sprinkling systems.

The Meter Locks feature 1-1/2" solid brass bodies, with 5/16" and 3/8" case hardened steel single post diameters. The single posts are available in standard lengths of 5/8", 7/8" and 4". However, single posts with specific lengths for unique applications are available from Wilson Bohannon.

The solid brass five pin cylinder used in the Valve Meter lock is available in standard and restricted Wilson Bohannon keyways, as well as common keyways produced by the Master, Yale and Corbin (CCL) padlock companies.

Wilson Bohannon Meter Locks have been used as locking devices for Safety Lockout Systems, in conjunction with surface mounted locking bolts, outboard motor locks and single copy newspaper vending racks.

See us at Booth 0478  
Circle 429 on Rapid Reply

### Reon Alarm Lock

Reon announces immediate availability of the all-purpose Alarm Lock. Designed specifically to protect against theft and tampering, the Alarm Lock may be used as a standard cable lock. Arming the unit requires inserting key and

turning one quarter turn clockwise until the armed "beep" is heard. When armed, the unit will sound a built-in 110 dB alarm if the cable is cut, or if the battery compartment is tampered with. Added security is also available by setting a sensitivity switch to the on position. In this mode, the unit will also sound whenever the lock is tampered with. This motion detection circuitry provides additional security scaring off would-be thieves, and alerting the owner immediately with an ear-piercing alarm. The additional motion security



feature allows for a 15 second delay before the unit is actually activated, allowing ample time for the owner leave the area. The unit will sound for a number minutes if unattended, and then will shut off and re-arm itself so if another attempt is made, it will go off again.

Two security keys and a bicycle post mounting bracket are included with the Alarm Lock. The six foot cable is made of extra strength steel cable and the case is high-impact ABS plastic, ultrasonically welded for water protection. The unit uses one standard 9 volt DC battery and weighs only 1.34 pounds.

Circle 428 on Rapid Reply

### 4000 Series By Security Latch

Security Latch's 4000 series offers the opportunity to add extra physical security to exits equipped with the new style panic hardware.



The 4000 series can add extra physical security to just about any out swinging door. As with Security Latch's original latches, the 4000 series can secure double doors with a center post, double doors without a center post, plus single left and right hand doors.

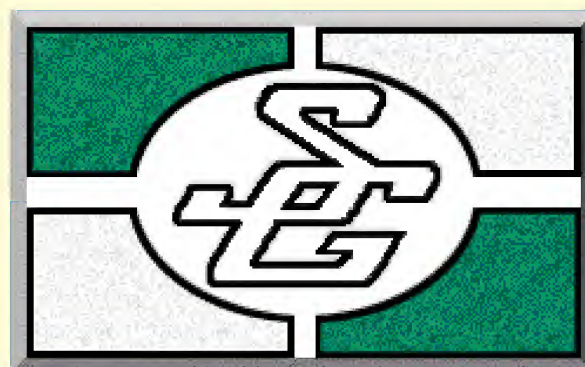
Circle 427 on Rapid Reply

### Latch-Matic

Latch-Matic, a remote control master locking system is the newest optional feature added to Reading's line of utility bodies. This centrally located remote

control locking system is activated through two key chain style transmitters and is designed to simultaneously lock and unlock all compartment doors from a distance of up to 100 feet. Latch-Matic offers great security as well as convenience.

There is a central receiver/control unit located in the body and a "hide-away" bulkhead-mounted receiver antenna which allows the electronic transmission to take place. The powered locking bars are constructed of 7/16"



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diameter cold finished carbon steel bar stock for maximum resistance to forced entry. Latch-Matic has specially designed padlock stations which allow use of either wireless or padlock actuation of locking mechanisms. When either roadside or curbside padlock is released, the opposite side locking bar is opened automatically at the same time, eliminating the need to ever unlock both padlocks.

Circle 426 on Rapid Reply

### KEYS

#### Kustom Key Alternative To LaKey Starter Kit

Kustom Key is now offering an alternative to their popular LaKey Starter Kit. LaKey Kit 2 contains a mix of only the SC1 & KW1 keyways for shops that find these keyways consistently their best sellers. As with Kil 1, it comes complete with a colorful counter display.



window poster and 140 large head keys in four attractively embossed designs.

See us at Booth 0568  
Circle 425 on Rapid Reply

#### Jet Hardware Mfg. Corp.

Jet Hardware is pleased to announce the release of 28 new precision brass and nickel silver key blanks. Unique among the new releases is the special security dimple on their key blades for Chicago Lock's K101H-NP, K102H-NP, K103H-NP and K104H-NP. Among their new blanks for foreign cars, you will find the HD74-NP for Honda Motorcycles, MIT3 for the

Mitsubishi and HD103-NP for the Honda Accord, and DA28-NP for Nissan. You will also note another blank for locks made by Cemex of Mexico, their T3NR. Master Lock's M6000 and M7000 and Kwikset's KW10 (smaller bow and shoulder adjusted blank for the Titan Line) is among the releases.

Now that the new bow style introduced by Corbin Russwin is reaching the market place, Jet is introducing their brass and nickel silver versions. For the brass series of the old keyways, the stock numbering is very simple. The alpha prefixes of Corbin and Russwin have been changed from "CO" and "RU" to "CR." The numbers remain the same. (e.g., CO88 on the new style bow is CR88, RU46 is CR46). To obtain the new bow on the old keyways, simply prefix "CR" to the old numbers

Circle 424 on Rapid Reply

### TOOLS & EQUIPMENT

#### Active Technologies' Lightning Charger Mini-Generator

A generator that can be easily carried on a shoulder strap, yet is powerful enough to jump-start heavy earth-moving equipment, has come on the market from ATI Power Products. The Lightning Charger provides truly portable electricity for running power tools miles from civilization, providing emergency lighting or power in disaster situations and charging dead batteries anywhere, in any weather.

The Lightning Charger weighs 16 pounds and is smaller than one cubic foot, yet it provides 55 amps of charging power and 80 amps of starting power through detachable jumper cables. It also puts out a powerful 900



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watts of continuous 115 volt DC power through twin outlet plugs. The engine is powered by a gasoline/oil mixture and its 20-ounce tank will run the generator for about an hour.

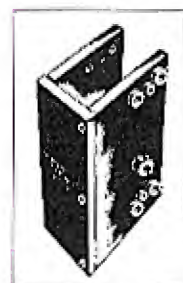
The key to packing so much power into such a small package is found in rare earth magnets made of neodymium iron boron. The Lightning Charger is completely manufactured in the U.S., with Tecumseh engines that are made in Wisconsin and the rest of the unit made in New Mexico.

The Lightning Charger is currently available with a 12 volt charger and in a dual 12/24 volt model.

Circle 423 on Rapid Reply

### Major Manufacturing's HIT-14 Drill Guide For With Falcon's Re-Lever Trim Kits

A new installation tool has been announced by Major Manufacturing Inc. The new drill guide, HIT-14, was designed to help speed the installation of the new NT Falcon Re-Lever Kits for



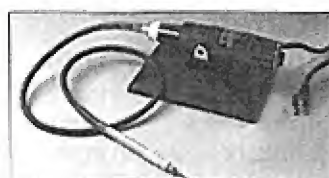
mortise locks. By removing only the trim, the entire retrofit process can be completed with the mortise lock in the door. Like the other HIT Series tools, all mounting holes are located with hardened steel drill guides. RC and RZ trim use 1/4" guides that will pilot a 5/8" hole saw after the pilot holes are drilled. The RW trim uses 3/8" guides and mounting holes are drilled through the door in one operation. With the HIT-14, installation is fast, easy and accurate.

See us at Booth 0340  
Circle 422 on Rapid Reply

### Dremel Moto-Flex Tool

The Dremel model 332 variable-speed Moto-Flex tool makes a welcome addition to any locksmith shop's tool assortment.

The 332 is designed for the continuous operation required for locksmith work. Its lightweight aluminum 1/2"



diameter hand piece utilizes an advanced ball-bearing housing design that virtually eliminates heat build-up during long periods of use. Its 3/4" thermo-plastic rubber-covered flex shaft has spring-type strain reliefs on both ends for longer, problem-free life and provides a lightweight connection to the powerful, variable-speed motor unit.

The Moto-Flex Tool is used to cut, grind and polish many types of metals. It is the preferred locksmith tool for fabricating custom lock parts, cutting slots in bolts and opening safes and other hardened steel applications.

The Moto-Flex Tool uses a .95-amp., 120 volt motor that generates 7,500 to 25,000 RPM. The tool includes a detachable 360 degree swivel base and a wall-hanging device. A complete accessory line is available. Also available is the Dremel model 232 single speed (20,000 RPM) Moto-Flex Tool. With the optional model 221 Foot Operated Speed Control or 219 Table Top Speed Control, the model 232 can be used as a variable-speed tool to perform a number of locksmith jobs.

These tools, along with Dremel's complete line of rotary tools and accessories,

are available at your locksmith supply outlet or local hardware stores and home centers.

See us at Booth 0213  
Circle 421 on Rapid Reply

### A-1 Introduces New QuickChange Kits For Pak-A-Punch Model 3

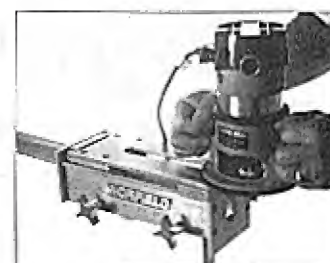
A-1 has introduced four new QuickChange Kits for its Hand-Held Automotive Key Punch. New kits are available for Chrysler series J1-3850/L1-3850, Ford 5-Cut, Saturn, and GM. 'J' Series (Cavalier etc.).

In addition, the manufacturer has introduced a master set of QuickChange Kits for Domestic use. The Pak-Master-ID set is a complete package of all QuickChange kits currently available for its Pak-A-Punch Model 3.

See us at Booth 0611  
Circle 420 on Rapid Reply

### New Norfield Tools And Supplies Template

Norfield Tools and Supplies' Flush Bolt Template saves time and money because it precisely machines doors for any standard 3/4" x 6" hardware.



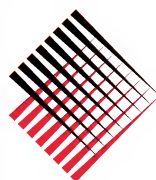
Easy to use, the template simply clamps onto the door edge, ready to make face, top and bottom, and face clearance mortises. With no adjustments necessary when making shallow or deep inset cuts, the Flush Bolt Template cuts labor up to 300 percent, helps eliminate mistakes, and makes routing safer. In addition, this portable

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template is ideal for in-shop or at-the-job-site routing. It also offers a durable, rust-proof aluminum body.

The Flush Bolt Template includes a router bit and template guide. All that's needed is a Porter-Cable 690 Router or similar 1/2" collet router that will accept a Porter-Cable template guide. **Circle 419 on Rapid Reply**

#### **Starrett Quick-Hitch Arbor**

Test have shown that the Starrett Quick-Hitch arbor permits hole saw change-over in less than half the time it normally takes using conventional arbors. This Quick Hitch design, used on 1-1/2" diameter sizes and larger, secures the hole saw with push-pull drive pins that snap firmly into place. Hole saws are quickly changed without tools and without removing the arbor from the chuck.

Starrett includes this Quick-Hitch arbor in their specially designed hole saw kits for construction, plumbing, electrical, industrial and general utility purposes. The hole saws are made of bi-metal high-speed steel and have variable-pitch teeth to speed cutting of wood, plastics and metal. The saws, arbors and adapters are packaged in a sturdy metal case, which is convenient both for carrying and for storage.

Starrett hole saw kits for plumbing, electrical, industrial and general utility work,



feature Quick-Hitch arbors that greatly reduce change over time; variable-pitch, bi-

metal high-speed steel hole saws for fast, easy cutting of wood, plastics and metal.

**Circle 418 on Rapid Reply**

#### **Slide Lock's 1994 Frameless Window Tool**

A new tool which clearly earned its way into the famous Z-tool System, A 52", two piece, stainless,



breakdown tool with its own vinyl pouch that fits into the main master case. Able to contact manual lock buttons and hit many power door lock switches involving high priced, high security models such as Toyota's, Lexus, and Nissan's to name only a few. Designed for multi-use with inter-changeable working tips that will be available as future models are introduced. Its a dandy addition to the Z-Tool System.

**See us at Booth 0455  
Circle 417 on Rapid Reply**

#### **Thorvie International Key Cutter Sharpener**

Locksmiths can create a new profit center for their businesses by sharpening their own cutters as well as those of others. The Thorvie AV49 by Thorvie International of Green Bay, Wisconsin, sharpens both carbide and steel milling cutters, side milling cutters, slotting cutters and more.

The space-saving design allows the unit to be placed easily in the shop as well as in mobile locations. The unit comes complete with a 2" Borzon grinding wheel, a training video and instructions.

**Circle 416 on Rapid Reply**



### HPC's New Blitz Code Machine

HPC's new Blitz code machine has arrived. It is an upgraded version of the world famous 1200CM. The Blitz works exactly the same as the 1200 CM, but has several added features.



Both the Depth and Spacing wheels have fewer threads per inch, which means that substantially less revolutions are needed to achieve the full range of travel.

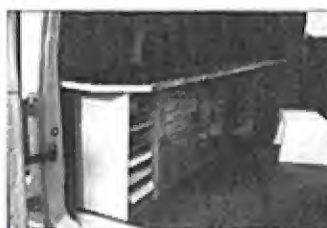
Other added features include a new flip-gauge that is more visible and easier to grab. Plus, the new Blitz

code machine is equipped with HPC's Softie deburring brush with a safety shield. HPC's Blitz is destined to become a new "Standard of the Industry."

See us at Booths 0300,0400  
Circle 415 on Rapid Reply

### Commercial Van Interiors' Workbench Module

Commercial Van Interiors is pleased to introduce a new workbench module featuring a space saving pull-out workbench platform that provides leg room for your cutting, pinning and other locksmithing requirements. When not in use, the workbench slides back into a stowed position for maximum "aisle" space in your vehicle. Available in sizes to fit with Commercial Van Interiors' other full size and mini-van modular equipment, the workbench module includes adjustable shelving and can be upgraded with optional drawers, cabinets and



Commercial Van Interiors' exclusive Sloped Key Machine Bases.

See us at Booth 0558  
Circle 414 on Rapid Reply

### SAFES & SAFE EQUIPMENT

### Sargent & Greenleaf's New Motorized Electronic Combination Locks

The new Model 6120 from Sargent & Greenleaf combines ease of operation with the security of an advanced electronic circuit design. Model 6120 features a push-button keypad, temper-proof tried and tested electronic controls, internal

relock trigger to protect against physical and punch attacks, and a six-digit code which provides on million actual combinations.

S&G's 6120 offers safe owners a secure, dependable, easy to use lock that looks as good as it works. In short, it practically sells itself. All that's necessary is to get a customer to try one. To that end, Sargent & Greenleaf is sponsoring a special sales kit program for locksmiths and safe technicians in the US and Canada.

Buy one S&G 6120 and get security, reliability and ease of use. Buy two and get a \$150.00 sales kit absolutely free.

The free sales kit includes one point of purchase display mount with instruction panel, and eye catching 20"x25" four-color poster, and fifty pieces of 6120 sales literature. Complete model



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6120 lock and keypad sets purchased from your distributor will be packaged with redeemable sales kit coupons. Two coupons can be redeemed directly to S&G for one sales kit through December 1, 1994.



Add a 6120 to your sales kit materials, and you have a package that will inform your customers of the advantages offered by this exciting new product. It sells even when you can't spend that valuable one-on-one time with your customer.

See us at Booth 0632  
Circle 413 on Rapid Reply

### GunVault's Rapid-Access Mini Vault™, MultiVault™ Safes

Suitable for use in homes, hotels, automobiles, water craft and recreational vehicles, the GunVault gun safes were originally developed to meet the safe storage of handgun legislation while allowing gun owners rapid and easy access to their gun.

GunVault also serves as an excellent code-activated storage device for documents, computer disks, cameras, credit cards, jewelry and other valuables.

An all-new keyless locking mechanism permits operation totally by touch, even in the dark, and allows for more than 40,000 re-programmable, user-selected

access codes. Fingers are guided to the proper position on the touchpad by raised Braille-like dots. The code is entered and the door springs quickly and quietly open.

The MiniVault measures 12" x 8" x 5" at the door tapering to 3.5" at the rear. The MultiVault delivers all the rapid-access, user friendly features of the MiniVault but measures 14" x 8" x 8" at the door, tapering to 6.25" at the



rear. With the removable shelf stowed, it will hold objects as large as a video camera.

GunVault safes feature strong, 16 gauge steel construction and can be easily mounted in any position, even upside-down in a cupboard or underneath a dashboard. Protective foam cradles the contents. The new safes operate on eight AA Alkaline batteries and does not require wiring.

See us at Booth 0143  
Circle 412 on Rapid Reply

### Olympus' New IFC5 Fiberscopes

Olympus America, Industrial Fiberoptics Division has announced a new generation of fiberscopes, the IFC5 series, with higher resolution, larger images, fixed focus, and "Tapered Flex" insertion tubes.

The new fiberscopes feature fiberoptic fibers that are smaller in diameter and

made with a new technology of optical fiber fabrication developed by Olympus. This allows many more fibers to be packed in the image bundle in the special geometrical alignment that is Olympus' hallmark. The result is a significant increase in resolution over older models. Higher resolution and larger images give the inspector the ability to see finer details with greater reliability, faster inspection time, and reduced eyestrain.

The IFC5 fiberscopes feature "Tapered Flex" insertion tubes, making it easier to snake the tube around obstacles and inspect difficult-to-reach inspection sites.

The new IFC5 series has nominal insertion tube diameters of six, eight, and eleven mm. Working lengths of the insertion tubes range from 800 mm (31.5") to 3000 mm (118.1").

The new fiberscopes have a wide range of optical tip adapters that attach to the end of the insertion tube with a double-locking mechanism.

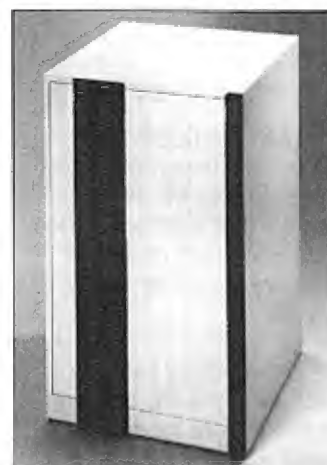


Low F-Stop adapters have brighter images and allow inspection under conditions that were previously too dark for adequate vision. Tip adapters also offer changes in direction of view, field of view, depth of field, near or far focus, greatly expanding the usefulness of the fiberscope, making one scope do the work of many.

See us at Booth 0704  
Circle 411 on Rapid Reply

### New Schwab Cabinet/Safe Line

For over 120 years, Schwab Corp. has protected businesses with fire-safe products. Schwab now introduces its new cabinet/safe line designed to be practical and powerful as well as contemporary. Each Schwab cabinet/safe is engineered to meet the strictest industry requirements for fire protection, but now comes



with a standard key lock and interior design. A combination lock and custom designed interiors will still be available upon request. Schwab's new line comes in a wide range of sizes for protection of both paper and electronic media records.

See us at Booth 0768  
Circle 410 on Rapid Reply

### SERVICES

### Gil-Ray Tools Sharpens Code Machine Cutters

Gil-Ray Tools Inc. offers a mail in sharpening service for dull code machine cutter wheels, to professional locksmiths. Established in 1945, Gil-Ray Tools has 48 years experience in sharpening all brands of dull code machine cutters for high security key systems. Gil-Ray toolmakers can match diameters on code cutters so that they can be reused many times. Only one

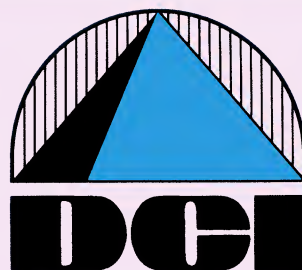




machine adjustment is needed when mounting the resharpened set, then the cutters can be interchanged like new cutters. They also sharpen duplicating cutters, flat slotters and rotary file cutters. All cutter materials are sharpened and repaired including high speed steel, tool steel, and solid carbide.

Gil-Ray also specializes in repairing cutters damaged by another's unsuccessful attempt at sharpening. All wheels are restored to blueprint specifications and can be sharpened many times.

Circle 409 on Rapid Reply



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## SOFTWARE ON PARADE

*"With computers becoming more of an integral part of locksmithing, here's a look at some of the software available for locksmiths."*

With the use of computers becoming an everyday affair for the locksmith and his business, it's often hard to choose software that fits your needs. Following is a sampling of packages available for the locksmith by various software companies.

### **Filetrak Ver1.2**

Lockplus Software  
P.O. Box 84 Russell Rd.  
Carlsbas Springs, Ontario Canada K0A1K0  
613-745-5096

System Requirements:  
IBM PC or compatible  
Hard drive with at least 1 Meg free disk space (for all system files and approximately 1000 customer files and 100 brand types)  
640K of RAM  
Monochrome or Color Monitor

Cost: \$169

This program is a file system for controlled keys. Although the original intent is for registered high security keys such as Abloy, Assa and Medeco, realistically, it can be used to register any keys that your keyshop cares to register.

The program is easy to learn and is operational within minutes from installation. Working on both color and monochrome monitors, it can look up a particular key record by customer, brand of key, or registration number by brand.

Data entry is easy and help is available through pop up windows. The key registration form is filled out for each customer and/or registered key. A registration number must be filled in for each record. The same registration number may only be issued to different lock manufactures. For instance, you may have a registration number of 101 for both Medeco and Schlage Primus, but not two number 101's in Medeco. Other information on the card is optional. However, to be used most effectively, the more information entered, the more effective your records will be. There is room for information on customer name, address, telephone, key code, cuts and angles.

After the above information is entered, your records can be searched and edited by registration number, customer name, phone number, code, cuts or angles. Pressing F2 allows additional searches, while F3 allows editing the registration card being displayed.

Information can be displayed to the screen or printer. Password protection available on the program. File maintenance sorts and removes deleted registration or brand cards. It includes a Backup/Restore program within the program.

### **Speedypik®**

350 Longwood Avenue  
Boston, Massachusetts 02115  
617-567-1111

System Requirements:  
IBM 286, 386 or 486 SX or DX (or compatible)  
25 MHZ or higher  
2 Meg RAM minimum - 4 Meg better  
130 Meg hard drive (200 is better)  
VGA or Super VGA monitor  
Printer - Dot Matrix  
Expandable bay

Cost: \$1495

This program incorporates CCD image recognition technology to view a customer's key profile. The included key reader requires installation into your computer as would a floppy disk drive with output card. After installation, additional key data can be input by inserting a manufacturer's key blank and adding requested information.

It can be set up to advise the locksmith on which hooks the keyblank is found. When a client brings in a key, their key is placed into the key reader. The computer sends a graphic of the client key profile to the screen and suggests several probable matches. The closest match will be flagged. Several probabilities may exist because of key wear and differences in aftermarket keyblank manufacturing.

Keyblank inventory can also be maintained with this program and can generate reorder forms for exact keyblanks and quantities which can be faxed to your distributor. It can also set a price list for keys. Password protection is available.

This program was evaluated using a demonstration disk and without the actual key reader.

### **KEY-Z ver 1.0**

Security Control Systems  
20202 S. Holly  
Frankfort, IL 60423  
815-469-0532

*Continued on page 34*



**Continued from page 32**

System requirements: IBM or compatible, hard drive, 5-1/4" or 3-1/2" disk drive, 640K RAM, DOS 3.0 or higher and monitor.

Cost: \$99.00 + SH

The program tracks key control for businesses by person or key. It keeps track of key to door assignment, key to person assignment within a system, and transfer key accountability. It can be used to identify keys that are signed in or out, lost, stolen, damaged, recovered, obsolete or transferred. It also prints out receipts for the issuance of keys. User definable fields are also available for user customization.

This software is GSA approved.

**Key Records Manager Ver 2.1**

Locksoft Incorporated  
P.O. Box 3168  
Bristol, TN 37625-3168  
615-652-2454

System requirements:  
IBM PC compatible or greater  
DOS 3.0 or greater (Found compatible w/ 5.0)  
Min 640K RAM w/ 540K Available  
Hard disk drive  
Disk drive size determines size of data files.

Cost:	KRM Professional	\$995.
	KRM 1	\$695.

This advanced program tracks the issuance of keys, key holders and doors for a facility using a master key system. The program does not create a master key system, a locksmith must provide that information. However, once that information has been entered into the program, it can track transactions of key holders, permanent or temporary. It tracks door keying and combination changes, and can even supply a pinning chart for rekeying purposes. The program comes set up to calculate pinning charts for Best type interchangeable cores, and can be modified to produce pinning charts for non interchangeable lock cylinders. Passwords offer different levels of authority for employee access to files. If no password is issued, pressing enter will allow access.

This program is not hard to operate, but because it is designed for larger systems, it requires some thought in setting up the systems. A well written manual is provided and pop up screen menus are available for assistance. We tested a demonstration disk. According to the manual, working programs require a hardware key for security.

**Dynamic Locksmith Plus**

MBI Business Software  
5249 Galaxy Parkway  
Sacramento, CA 95823  
800-551-4624

System Requirements:  
IBM or Compatible, 286 or higher  
MS DOS 3.3 or higher



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Min. 80 Meg hard drive  
Min 640 K RAM

Cost: \$695

This program is a well integrated accounting system designed for locksmiths. It is designed to do everything from billing to printing checks to writing purchase orders to keeping employee records. It keeps track of inventory in your shop and in multiple service vehicles – but only if you want it to! It will write invoices for you, keep track of employee sales, schedules and commissions. It will track repairs and maintenance and insurance records for each of your service vehicles.

Various screens are user password protected so that employees can use and share some files and not others. For instance, a dispatcher may want to file a dispatch report but be denied access to the bank and check writing files.

Although it is an advanced program, it is easier to use than other generic accounting programs. If pop up help menus don't clear up a question, customer support is friendly and available late into the evening. Within several days, a user should feel comfortable working with this system.

Because this program tracks and updates related files automatically, before implementing the program thought must be given to your own business and how to best set up the program. This program supports up to 20,000 files for each screen (e.g. 20,000 invoices, 20,000 customers, 20,000 vendors, 20,000 employees, etc.) Users can purge their system from time to time, or may find it useful to upgrade to a larger system that operates in the same fashion. This program comes with its own screen saver.

### **KeySoft Masterkey System Ver 4.0**

KeySoft  
854 So. Redwood Rd.  
Salt Lake City, UT 84104  
801-972-1369

System Requirements:  
IBM XT or compatible or higher  
MS-DOS 3.0 or later  
640K User memory  
One or more disk drives

Cost: \$149

The strengths of this program are in its compactness with versatility. The program runs very well with a hard disk, but is still effective with only one floppy disk drive. The creator, Rick Wilkinson, claims 200 files can be kept on one floppy disk. As with any master key software, the user should be familiar with master keying principles, if for no other reason than that for the security of the client. The program comes with a concise manual which supplements the pop up help menus. A master key system can be set up from a list of 10 well known standard pin tumbler lock manufacturers or set up your own custom list. MACS specifications can be

changed, and keys violating the MACS will not be printed. High security and interchangeable core locks are not directly compatible with this system without optional upgrade packages for ASSA or Best/Falcon.

The program allows for the storage of customer files, including the description of key usage (key tracking). Additionally, it is possible to send a key tracking report to a text file in your word processor for easy editing. This easily allows you to give your customer a description of which keys operate what doors, how many changes have been used within the system and which changes are available, without giving away the critical or competitive details of the biting list.

Up to two chambers can be held constant and up to two chambers can have scrambled biting arrays. This helps keep the lock cylinder more secure from the use of fewer master pinned chambers and prevents all high cuts on the first change keys generated in the system. Also, by using the scrambler option, the master key system will be more difficult to reverse engineer by unauthorized personnel.

Pinning and key charts can be printed to screen or printer.

### **FIVE Ver 1.1**

HPC, Inc.  
3999 N. 25th Ave.  
Schiller Park, IL 60176  
708-671-6280

System Requirements:  
100% IBM Compatible Computer  
612 KB Internal Memory RAM  
Hard Drive  
MS DOS 3.0 or higher  
Printer

Cost: \$300

HPC's newest masterkey program is an advanced program that allows versatile masterkey development, editing, and for the transmission of data to a Codemax™ key machine for automatic key cutting.

It allows for the creation of level 1 to level 5 masterkey systems. It knows that a level 1 masterkey system is really only a list of change keys and labels them as KD1, KD2, KD3 and so on. It lists higher levels of master key systems appropriately as well.

The program generates systems using from five to seven chambers. You can develop standard total position progression systems, rotating constant systems, hold as many chambers to all but one as desired, choose the chambers to be held, choose the progression sequence, and choose the order of the biting matrix numbers.

Key systems are generated after you are prompted for the quantity of master keys and change keys under each master required. If more change keys are needed than the



parameters of the masterkey system, the current system can be edited to allow for the change keys needed – provided the lock manufacturer can handle the amount of keys you require. Systems can be edited at later times and generally enlarged.

The systems are saved under a customer file. A customer can have more than one master key system in their file. The program also provides for password protection.

### **Ultimate Master 2000 Ver 2.2**

Rabbitsoft  
43853 Tranquility Ct.  
Lancaster, CA 93535-6115  
805-946-6923

System Requirements:  
IBM-PC or compatible or higher  
MS DOS 3.0 or higher  
640KB RAM  
Two floppy disks drives or a hard disk drive  
A 132 column printer or 80 column printer w/compress mode

Cost: \$295 + S&H

This easy to learn masterkey program generates charts using rotating constant or standard total position progression methods of masterkeying. The system creates 5, 6, or 7 pin systems. It allows for the setting of the progression sequence and the biting matrix. The program warns you if a created system is "duplicated" and asks for permission to continue. It provides a list of 17 different "stock" lock hardware masterkey specification systems including some rarely seen systems like American and Master Padlock, single step Schlage and two step Kwikset systems. You may also add your own "manufacturers."

All change and most master keys are listed in a standard format as if the masterkey plan was filled out by hand on popular biting forms – familiar to those of us who created masterkey systems before computers became popular. Keys that violate MACS are listed but flagged by an asterisk. Partial or full biting systems and pinning charts can be displayed on screen or printer.

This program includes an easy to follow manual, pop up help windows, and is mouse compatible.

### **Multi-Master 4.0**

DLA, Inc.  
629 Kimball Ave.,  
Westfield, NJ 07090  
908-233-7755

System Requirements:  
IBM or compatible  
1 High density disk drive minimum or hard drive  
Line printer (Laser printer on emulation mode)

Cost: \$95

This masterkey program offers masterkey capabilities to a technician with even little masterkey experience. The program allows 14 defined manufacturers, including Best/Falcon, Emhart High Security, and Medeco. The usual manufacturers such as Schlage and Kwikset are also among the menu of manufacturers. MACS can be modified.

The program works with 5, 6 and 7 pin cylinders. The top master key is user provided, but progression sequence and biting matrix is non changeable. This program only uses total position progression.

All displays go to the printer. The printer can be stopped at any time by pressing F10. Biting and pinning charts can be printed in their entirety or in sections that you choose. Change keys, vertical group masters, vertical column masters, horizontal column masters and page masters are printed on each page. MACS violation combinations are printed and flagged with x's. The page format is that of the hand printed masterkey charts. Saved programs can be reprinted in whole or part for later expansion.

A separate list can be generated showing used change keys and the doors they operate. These can be safely given to the end user as no critical or competitive information about the masterkey system is displayed on the printouts.

Keys are labeled numerically or alphanumerically.

One distinctive feature of this program is that, in addition to standard pinning charts, the first page of the chart prints space and depth specifications for key cutting and the size specifications for pin tumblers.

DLA also makes a program for working with masterkey systems exclusively for interchangeable core cylinders called Multi-Core.

### **COD: Codes On Disk**

Blackhawk Products  
25913 County Road T.5  
Dolorco, CO 81323  
303-882-7191

System Requirements:  
IBM XT or higher, or compatible  
MS DOS 2.0 or higher  
Hard Drive (COD uses 2 Meg of space)  
Parallel printer port (DB25 female)  
Printer is optional but useful

Cost: \$600

This program looks up codes and displays them on an uncluttered screen or printer for use. It is easy to use and install. The program asks for a code. Upon entering the code, the program searches and lists all known possibilities. For instance, if you need to find the specifications for code FR209, after that number is entered into the program, it finds three series with that number. It lists: 1) Jaguar MG Triumph Fiat; 2) Handles (Yale wafer); and 3) Illinois double sided. Choose 1, 2, or 3. Once a code is displayed, you have



the option of viewing or printing the specifications according to Blackhawk space and depth, Baxter guide keys, code cards (For HPC 1200CM), Curtis clippers, for Framon or input to an TTL automatic cutting machine. Keyblank information is also provided.

Keyblank Cross Reference program (KBX) and the Code Book Index program (CBI) work within COD if they are installed in the same directory.

Other features include the ability to convert space and depth measurements from inches to metric. An excellent leasing program is available where COD plus 6 other programs are available for under \$25 per month, with free updates as they are available.

Security feature makes unlawful duplication difficult.

### CodeMaster

Treskat USA  
725 Adriane Park Circle  
Kissimmee, FL 34744-4903  
800-645-5657

System Requirements:  
IBM and compatible  
Hard disk not required

Cost: \$619

The program allows for easy installation onto any chosen drive. The low memory requirements allow use on many

laptop, notebook and even palmtop size computers.

After installation, entering "CM" brings you into the program where codes can be searched by scrolling through the index or entering the first letter or number of the code series you wish to query and hitting "Enter."

For a faster and more efficient way of doing a code search, simply hit F5, your code and "Enter." All possible series for that code are now available in an index card format. Hitting any key allows you to go to the next code possibility. When the proper code is found, you can print out the code information or an entire work order.

You have an option of querying either only automotive or non-automotive codes to quicken the search. Upon finding the code, the program displays the keyblank, code, space and depth information, Framon space to first cut and cut to cut specifications, and HPC 1200 code card information.

The program also allows Keymanager (Treskat's keyblank reference program) and Automaster, an auto encyclopedia on disk, to work within CodeMaster.

TTL computer code machine users can obtain an optional program interface, allowing for automatic key cutting.

An optional payment plan includes 10 payments of \$61.90 each (total \$619). Each installment brings you more files.

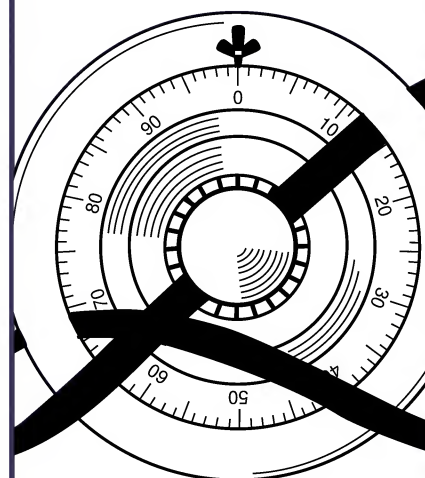
For copyright protection a security feature makes unlawful duplication difficult.



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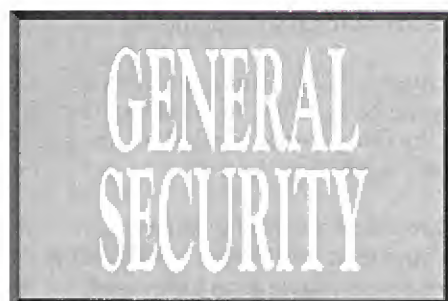
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## SCHLAGE "A" SERIES TEAR DOWN

Test Article #55

by Giles Kalvelage

The A Series Schlage lockset, as discussed in a previous article, is a Grade 2 lockset. It is durable and consistent in design from year to year. Many may suggest it as a standard for the industry. Schlage suggests this lockset for light duty commercial and heavy duty residential applications. It is not uncommon for many commercial establishments to use these locksets for 20 years and have them continue in use as though they were almost brand new.

The Schlage A Series lockset is available in the following functions:

- A10S Passage Latch
- A20S Closet Latch
- A25D Exit Lock
- A30D Patio Lock
- A40S Bath/Bedroom Privacy
- A43D Communicating Lock
- A44S Hospital Privacy Lock
- A53PD Entrance Lock
- A55PD Service Station Lock
- A70PD Classroom Lock
- A73PD Dormitory Lock
- A79PD Communicating Lock
- A80PD Storeroom Lock
- A85PD Hotel/Motel Lock
- A170 Dummy Trim

Notice the first letter in each of the above function series is A. Of course this letter refers to the series, in this case, the A series Grade 2 bored knobset. The last letter is either an S or D. These letters stand for the type of latch assembly to be shipped with the lock. The S stands for springlatch, the D for deadlatch.

A commercial product such as this will usually carry a higher price tag than most hardware primarily designed for the residential market. The list price for a Schlage A Series Entrance lockset in satin chrome with a Plymouth knob design is around

\$82.00 each. At this price, if something goes wrong with the lock, it is practical to repair instead of replace the lock.

For this reason, most wholesale suppliers of Schlage products also stock a generous supply of replacement parts for Schlage locksets. Also, throughout one's career, one will usually fall into a number of "retired" Schlage locksets which it may be in adequate shape to scavenge for parts. There is nothing wrong with replacing an old broken piece of a Schlage lockset with an old good piece from a scavenged lockset - as long as new part prices are not charged and the client is aware that the replacement parts are not new. It's likely that an institutional locksmith will have boxes of scavenged replacement parts ready for service.

This month we will disassemble the Schlage A53PD. (See exploded view and parts list on page 42.)

### Disassembly

1. Remove the lockset from the door by releasing inside knob catch, removing inside knob, removing inside rose, removing mounting screws and inside mounting plate and sliding remainder of lockset assembly out of the front of the door. This procedure was more fully explained in last month's article.

2. Using cotter pin extractor, pliers or another proper tool, remove the two cotter pins from the housing and cap. (See photograph 1.) Carefully slide the



1. Remove the cotter pins from the housing and cap.

housing and cap off the inside spindle.

3. With the thumb of one hand, depress the slide as far as it will go. With the other hand, unhook the plunger by pulling and lifting the plunger and button. If the button is missing, (the button simply snaps onto the plunger), pulling on the spindle will work. (See photograph 2.)

4. Gently pry the inside plate off using a screw driver. By placing the



2. Remove spindle and plunger.

screwdriver at one of the ears and gently prying, the plate comes off. It is not necessary to bend the tabs of the frame to remove the plate. (See photograph 3.) Carefully remove the inside plate, then the slide, slide springs and slide seat. Carelessness will demonstrate how the slide springs can fly with the speed and distance of a space shuttle.

5. Redirecting our attention to the outside half of the lockset, remove the outside cam (located in the center of the outside spindle and catch assembly). The outside cam simply lifts out of its place by hand. (See photograph 4.)

6. If the outside knob has not yet been removed, now it the time to do so. It may simply be removed by turning the key in the cylinder 90 degrees, depressing the catch and pulling outward on the knob.

Continued on page 40



3. Gently pry to remove the inside plate.





Continued from page 38

**What!? No key? - No problem.**

If there is no key and we are at this step of disassembly, photograph 5 shows the outside spindle, as viewed from the inside, with the lock cylinder still in place. The bar and driver is visible in the very center of the hole, and to the left, the "E" shaped knob catch is viewed. When the cylinder is not turned, it is the center rung of the "E" that keeps the catch in place when pressed against the bar and driver. This prevents the catch from releasing the knob unless the plug is turned. Using the key turns the plug, cylinder bar and driver allowing clearance for the catch to release the outside knob.



4. After removing the slide, slide springs and slide seat, the outside cam can be removed.

If no key is available, use a probe to go through the spindle, over the catch, and depress and hold the retainer cap pin. With a long nose pliers, turn the bar and driver 90 degrees counter clock wise. The catch will now depress, allowing the outside knob to

be removed. Shim the cylinder open to service the cylinder as necessary.

7. With the outside knob removed, the spindle and catch will slide up through the frame, outside hub cap and outside plate when the spindle and catch line up with the boss on the outside plate.

8. The outside plate will slide out of the frame, and the outside rose will simply unscrew off of the frame.

The lock is now completely disassembled.

Photograph 6 shows all of the parts of the lockset. The lockset shown is an Orbit design. The Orbit has a longer bar and driver than most other designs of Schlage A Series locksets and includes a plastic sleeve that helps secure the cylinder in the knob assembly.

**Reassembly**

Reassembly is virtually the reverse of disassembly, with a few variations.

1. Reattach the outside rose to the frame.



5. With the cam removed, the bar and driver as well as the knob catch can be seen inside the spindle.

2. Insert the outside plate into the frame so that the bosses face the slide spring fixtures of the frame.

3. Slide the outer spindle and catch into the frame, lining the catch with the boss of the outer plate so that it will freely slide into the frame. Rotate the outer spindle and catch so

that the ears of the spindle and catch are opposite the bosses of the outer plate. (The thin boss on the outer plate lines up with another thin boss on the frame. The inside plunger slides into these bosses when the lockset is completely assembled. This is the mechanism which actually locks the lockset.)

4. Insert the outside cam into the outside spindle and catch. Make sure the ears of the outside cam match up to the ears of the spindle and catch.



6. A disassembled Schlage A series entrance knob.

5. Position the slide spring seat into the non-restoring slide. Insert the two slide springs into their respective cavities. With the larger cut out facing the outside half of the lockset, carefully (remember, these springs can still do the space shuttle shuffle during reassembly) position the slide springs into the frame and gently place the non-restoring slide onto the frame.

6. With the curved edge on the side of the slide springs snap the inner plate into place.

7. With the thumb of one hand, depress the non-restoring slide as far as it will go. With the other hand, place the inside plunger *without the button* into position. (See photograph 7.) If the button is still attached, unsnap it by pulling outward from the inside plunger.

Continued on page 42

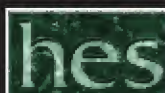
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**Continued from page 40**

8. Slide the inner spindle and catch over the inside plunger. Position it into place within the inner plate. The ears will go towards the latch side of the inner plate.

9. Slide the housing and cap over the inside spindle and catch. Make sure the tabs on the frame fit through the slots in the housing and cap. Secure it with the cotter pins.

10. Push the button onto the plunger. It will snap into place. (See photograph 8.)



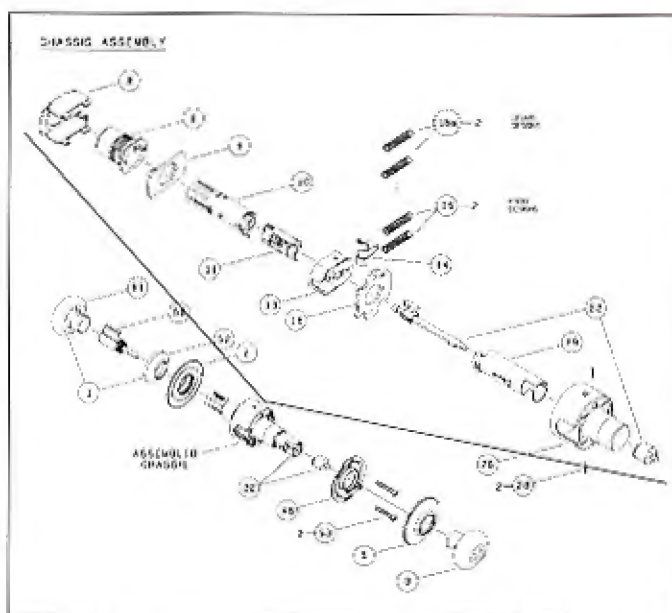
8. Snap the button back into place.

11. Install outer knob. Check for proper operation.

The lockset is now ready for replacement on the door.

Lubrication between the non-restoring slide, the inner and outer plates and the inner and outer spindle and catches within the frame is recommended when needed. This is needed if the lockset is disassembled and cleaned or after heavy use. It is possible to lubricate the lockset after reassembly, but it is much more efficient to lubricate during reassembly. The factory uses a high quality petroleum base grease. A nice coating of grease on the contact points is good, but don't over do it. Of course, a light touch of powdered graphite is good lubrication for inside the lock cylinder.

Now, the lockset is ready for reinstallation.



### Schlage A53PD Parts List

Drawing #	Part #	Description
1	01-018**	Knob & sleeve, cylinder
2	01-001**	Outside rose
3	01-009**	Knob/open
5	01-002**	Inside rose
6	A201-399*	Outside Hub & Cap
8	A201-398	Frame
9	A508-399	Outside Plate
10	A301-387	Outside Spindle & Catch
11	A301-402	Outside Cam
13	A500-159	Non-Restoring Slide
14	A508-507	Spring Seat (Knob Designs)
15	A501-311	Side Springs (2) (Knob Designs)
15a	A508-605	Side Springs (2) (Lever Designs)
16	A501-305	Inside Plate
22	01-090***	Inside Plunger and Button
26	A301-403*	Housing & Cap, 1-3/8" to 1-7/8" doors
	A301-404*	Housing & Cap, 2" to 2-1/4" doors
	A301-405*	Housing & Cap, 2-1/2" doors
	A301-406*	Housing Threaded, 1-3/8" to 1-7/8" doors
28	C500-008	Cotter Pin
29	A301-386	Inside spindle/catch 1-3/8" to 1-7/8"
	A301-400	Inside spindle/catch 2" to 2-1/4"
	A301-410	Inside spindle/catch 2-1/2" doors
48	A201-377	Inside Mounting Plate
51	01-009**	Cylinder Knob, less Sleeve
52	01-000**	Cylinder Knob Sleeve
53	A501-161	Mounting Screw (2) 1-3/8" to 1-7/8" doors
	A501-818	Mounting Screw (2) 2" to 2-1/2" doors
56	A21-002****	6 Pin cylinder, except Orbit Design
	A21-02-122****	6 Pin cylinder, Orbit Design

\* Specify finish

\*\* Specify finish and design

\*\*\* Specify finish, design and door thickness

\*\*\*\* Specify finish and keyway

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# AUTOMOTIVE SECURITY

## THE FORD 10 - CUT Part 2

Test Article #56

by Tom Mazzone

There are several different methods that can be employed for generating an ignition key for a 10-cut Ford locking system. A few methods of choice are progression, try out keys, and the use of true cut key sets available through various suppliers.

The use of true cut keys takes a fair amount of work but yields an actual key code that can be copied onto the correct blank. These sets are expensive and encompass 1090 codes on 550 blanks.

Try out keys are typically 80 to 90 percent effective. While this may be one of the fastest key generation methods, there is a small margin for failure due to tight tolerances of individual locks. Once the correct tryout key has been determined, the tryout still must be decoded to get the true bitting. This is a much more condensed version of progression, using fewer key blanks.

Progression is a slower and pain-staking process that can be costly, sometimes requiring the use of 13 trial blanks. The trade off is that it is sure to produce positive results.

When working on a Ford using the standard 1984-1/2 10-cut system, the above three procedures share the same beginning step in that there is the need to know the door's fifth and sixth cut. This is the ignition's first and second cut. As stated in last month's article on the Ford 10-cut, the depths of these two spaces are found in the door lock. The most important step is being accurate in these two cuts. If you go wrong here, all other efforts will lead to failure.

### Method One: True Cut Keys

To proceed using "true cut" keys,



1. Shown is just a few of the true cut keys that must be tried after the depths of spaces 5 and 6

the steps are really quite simple. With the fifth and sixth positions known, choose the group of keys which encompass all possible combinations for that series. For example, if position five is a "three" depth and position six is a "two" depth, we would use the 3-2



2. Tryout keys can be used to give you a range of possible bittings from which to choose. Once a key turns, refer to the progression list provided with the set of keys and progress a working key.

group of true cut keys. (See photograph 1.) Try all the keys in that set until you find one that turns the ignition lock. Remember to use both sides of the key as there is a different bitting on each side of the key. Ford ignition wafers come in from the top of the keyway down. This means that the bitting that operates lock comes from the top of the true cut key.

Once a working key is found, all that remains is to duplicate the bitting onto the correct keyblank. The amount of possible attempts for a 3-2 code series is 56 tries on 28 keys.

### Method Two: Try Out Keys

Try out keys are similar to true cut keys in that you must work through a set of keys until one operates the lock. Unlike true cut keys, however, there are less keys to try. This is accomplished by playing with the tolerances of the lock. The keys are not cut to true depths, and instead, are cut to half depths. The loose tolerances of the ignition often allow a key cut close to the correct key to work.

Just as with true cut keys, the fifth and sixth positions need to be determined. For purpose of example we will use depths 3-2 again. Find the ring of tryout keys that covers 3-2 and try both sides of the key. Use a gentle up and down rocking motion and turn the key toward "START" and "ACCESSORY." Due to varying tolerances in any given lock, the key may turn to "ACCESSORY" only or it may turn to both positions. Always lubricate the lock before beginning. (See photograph 2.)

Once the correct tryout key has been determined, it is necessary to decode the tryout key into its true code. Remember that depths on try out keys are half depths and cover

*Continued on page 46*



*Continued from page 44*

two actual depths except for the five depth. Example:

Try Out Depth	Actual Depth
1	covers 1 or 2
2	covers 3 or 4
3	covers 5

A number three tryout depth only covers depth five because in Ford locks there are only depths one through five. On Ford 10-cut tryout keys, depth number three is a true five cut.

For example, a tryout key that operates an ignition has a bitting of 212323. We know that this bitting reflects half steps. We also know that the first two cuts are 3-2. So, decoding our chart of possible true codes is as follows:

Tryout Bitting	Known Possibilities
212323	323535
	323545
	324535
	324545

As you can see, the tryout key system greatly reduces your progression. Using the applicable MACS factor simplifies things even further. There are only four possibilities in this example and they can be cut using both sides of one blank.

If an operable key is not produced, try the entire ring to see if one or more tryouts turn the ignition. There are cases of extreme wear when bad tolerances can cause additional tryouts to work. If one is found in addition to the first operable tryout progress that group of changes as well. Most tryout sets come with charts of possible bittings which correspond to specific tryout keys.

#### **Method Three: Progression**

Progression also yields positive results, but the procedure is usually the longest of all. Observing the MACS factor (2 for the Ford 10-cut), we begin again with 3-2 in the fifth and sixth cut and progress through the entire series of possible keys. For our example with the 2 depth in space six and a MACS of 2, we know that a 5 depth cannot be used in space seven.

This eliminates a large number of possible keys. To make the job easier a progression chart can be used. (See table 3.)

This particular 3-2 combination has a potential 56 combinations using both sides of eight keys. That is a lot of work on any type of code machine, whether it's a HPC 1200, Framon, or Curtis Clipper, it's still a lot of work.

Whatever method you choose will work if enough criteria is known. The 10-cut system has been around almost ten years and it looks like it's here to stay.

#### **Summary**

##### **True Cut Keys**

- Determine door position 5 and 6 (ignition tumblers 1 and 2).
- Locate box which holds all key code combinations with the matching 5 and 6 position
- Try both sides of true cut keys until combination found.
- Duplicate onto key blank.

##### **Tryout Keys**

- Determine door position 5 and 6 (ignition tumblers 1 and 2).
- Locate ring with tryout keys with matching 5th and 6th position
- Try all tryout keys on ring until ignition turns.
- Decode tryout keys using simplified progression and MACS factor (2).

##### **Progression**

- Determine door position 5 and 6 (ignition tumblers 1 and 2).
- Using MACS factor (2) progress all possible numerical codes.
- Progress codes utilizing same side of key blank as much as possible.

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*Continued on page 48*





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## 1984½ Ford 10-Cut Progression Chart

Table 3. Locate the list of bittings matching the depths found for spaces 5 and 6. Using one side of a key, cut spaces 5 and 6 followed by the first biting found in the list.

Try the key. If it does not work, go down to the next biting and cut that on the same side of the key. When you reach the end of the block of bittings, use the other side of the key to start the next block of bittings.

Remember to recut spaces 5 and 6 everytime a new block and key is started.

### When spaces 5, 6 are 1, 1

3112 2231 3311 2421 2123 2323 2334 2224  
3213 2242 3431 2432 3124 2424 2354 3324  
3234 2343 3532 3433 3135 2435 3454 3353  
3245 2453 3534 3543 3335 3445  
3355 2455  
3232 2244 2134 3422 3243  
3342 2345 2235  
3344

### When spaces 5, 6 are 1, 2

4211 1311 1322 1313 1124 2431 2311 4231  
4321 3331 1324 1343 3124 2433 3421 4431  
4422 4332 1354 2353 3235 3533 2531 4442  
4532 4433 2454 2355 4335 4534 3542  
4543 4445 4454 3455 4355 3544  
1234 2422 4213 2342 2213 3224 3312 1242  
1245 3432 4233 2344 2243 3331 3423 3242  
4245 3453 4353 2445 3244 3354 3435 3343  
4344  
4323 1135  
4424 1335

### When spaces 5, 6 are 1, 3

1113 1212 2123 1121 4311 1224 2231 2421  
1134 4212 2323 1342 5321 1235 4331 4421  
1334 5312 2343 1345 5332 2335 4432 4531  
5334 5422 2453 4345 5433 3355 4542 5532  
5534 5442 4453 5355 5435 4455 4544  
5545 5543 5454  
1243 3124 3422 3131 2242 4221 4322 2135  
1353 3324 3532 5232 3342 4223 5323 2245  
2354 3344 4533 4242 4343 4234 5424 2455  
3454 3445 4535 5353 4254 4434  
2432 3113 3431 2424 3243 2234  
3433 4423 5431 3534 5353  
3543

### When spaces 5, 6 are 2, 1

2223 1124 1242 2312 2422 3131 3242 3313  
2243 1234 1343 2342 3432 3233 3343 3423  
2353 1245 1354 2344 3542 3254 3453 3435  
2355 2445 2454 3354 3544 3345  
3455  
3421 2331 3134 1324 3224 1135  
3531 2433 3235 3334 1335  
3533

### When spaces 5, 6 are 2, 2

1123 1231 3113 4311 4221 1224 1342 1323  
1134 1243 3124 4331 4421 1334 3342 3424  
1235 1353 3135 4432 4531 3335 4443 3534  
1345 3353 3245 4542 4533 3445  
3355 4354 4345 4544 4553  
4455  
3211 4212 3433 3243 4224 4313  
3431 4232 3543 3454  
3532 4235

### When spaces 5, 6 are 2, 3

4211 1311 1124 3212 2512 3121 3421 1213  
5311 2331 1135 4213 4312 3231 3432 1234  
5421 2353 1335 5313 5322 5331 5432 1354  
5531 4353 4335 5324 5423 5342 5434 3354  
5533 4355 4435 5544 5443 5344 5535 4454  
5553 5455 4445  
1242 2134 2423 4431 3123 4321 5531 1324  
1343 2235 3533 4442 3224 4532 3542 2454  
5453 2435 3544 5542 4244 4534 4543  
3455 3535  
1245  
2345

### When spaces 5, 6 are 2, 4

2135 3113 2112 2321 3133 3311 3131 2121  
3235 3124 2132 2431 3243 3313 3331 2123  
3435 3424 2334 3532 3253 3433 3342 2245  
3545 3424 5334 3534 4354 3543 3345 2445  
5545 5454 5455 5534 4455 4544 3545  
2211 4421 5321 2231 4231 4212 5312 3221  
2213 4423 5323 2354 4242 4223 5332 4531  
2453 4533 5433 3454 4245 4324 5343 4542  
4453 4535 5543  
5431 3122  
5532 5422  
5442

### When spaces 5, 6 are 3, 1

2112 1311 1122 1213 3121 2242 1134 1342  
2123 2421 2124 1224 3231 3342 1235 2343  
2245 3422 2324 2234 3431 3344 1345 3353  
3355 3424 2354 2434 3433 3445  
3454 2455 3534 3543  
1243 2432 2135 3212 2423 1334  
1353 3532 2335 3243  
2453

### When spaces 5, 6 are 3, 2

3112 3311 1312 2131 4211 1242 1223 4321  
3213 3421 4312 2431 4231 1343 1324 4431  
3234 4423 4323 3531 4242 2353 1354 4532  
3434 4543 4353 3533 4245 3554 2454 4534  
3544 4355 3535 4445 4454 3455  
1124 2313 2134 1331 1234 4223 3442  
1135 3343 2334 1335 1245  
2235 3453 4335 2435  
2345

### When spaces 5, 6 are 3, 3

1211 2113 1131 4311 4221 4212 1322 1224  
2221 2124 1134 5321 4421 5312 4322 1235  
2421 2135 1334 4431 4531 5332 5422 2335  
2433 4235 2354 5442 4542 5532 5433 4535  
2445 5335 5354  
1313 1243 1342 4331 2245 2424  
4313 1353 1345  
5323 2453  
5424

### When spaces 5, 6 are 3, 4

2122 2311 2131 3112 3121 3211 2212 3321  
2224 2331 2133 3123 3231 3312 2422 5421  
2335 5331 2353 3134 2431 5322 3533 5531  
2345 5432 2454 4335 4532 5423  
5355 5453 5542  
5311 2313 3213 3132 2435 3244 4342  
5313 4424 4243 3442  
5324

### When spaces 5, 6 are 3, 5

3122 3311 3221 3212 3113 3124 3131 4211  
3232 3421 4231 4312 3313 3324 3331 4213  
3234 3531 4332 4422 3423 4334 3432 4224  
3445 5542 5342 4442 5424 4534 5532 4235  
4545 3553 5543 4454 5435  
3322 3133 4321 3223 3342 4242 3135  
4323 4233 4431 3243 3344  
4353 4244

### When spaces 5, 6 are 4, 2

1211 2311 1121 1231 1112 1213 2122 1123  
3211 3321 3121 3231 2212 1233 2124 2153  
4311 4421 4221 3431 3312 1353 2135 3134  
4331 4531 4243 3435 4313 2453 2245 3334  
4342 4533 4341 3545 4424 3454 3345 3334  
4542 4535  
4544  
1321 1332 2113 1134 1132 1325 1224 2331  
2421 3352 3123 1235 3132 1331 1244 2432  
2445 3552 3553 2325 3235 1345 2354  
4455 3543 4453  
2322 4212

### When spaces 5, 6 are 4, 3

2211 1311 1221 1122 2112 2121 1212 1113  
4211 3311 3221 1133 3113 2321 3212 1124  
5311 4321 4231 1135 4213 3421 4312 3124  
5421 5331 4431 1245 5313 3531 5322 4224  
5531 5432 4532 3245 5423 3542 5542 5324  
5542 5434 4554 4345 5533  
5544  
2231 1331 2312 2132 2213 3131 1232 3122  
2431 1355 2553 2134 3313 3135 1234 3223  
2442 2345 2454 2434 4223 2135 2244 3423  
3553 3445

### When spaces 5, 6 are 4, 4

2123 1225 1324 4422 3242  
2233 1343 3324  
2235 1354

### When spaces 5, 6 are 4, 4

2221 2113 3331 5312 2421 5321 2242 2324  
2322 2124 5322 5422 2423 5431 2245 2354  
3532 2135 5442 5424 3534  
5532 2335  
5553 2445  
3235 5323 2453 3353

### When spaces 5, 6 are 4, 5

3211 3112 3312 3123 3121 3231 3132 3213  
4311 4212 4313 4223 4221 4232 3134 3224  
4421 4322 4324 4243 4331 4342 3244 3233  
4531 4423 5334 4245 4422 5353 3354 4234  
4542 4453 5524 4355  
3321 3242 5323 3431 3332  
3422 3442 3335  
3424

### When spaces 5, 6 are 5, 3

1211 1121 2311 1112 1321 1231 1213 2113  
3211 3121 3321 2212 2421 2331 1233 2313  
4311 4221 4421 4212 3431 4331 2243 2423  
5321 4322 4531 5312 5431 4342 4243 2443  
5422 5323 4542 5332 5532 5442 4445 2445  
5424 5353 4553 5334  
5534 5455

### When spaces 5, 6 are 5, 4

1123 2131 3112 1312 2122 1132 2221 2124  
3123 2133 3312 1332 2322 2232 2223 2324  
3224 3233 3422 2342 3323 2432 4223 2344  
3244 3235 3424 3442 4324 3532 4234 2355  
3354 4245  
3231 3213 1224 1242 1323 3132 1134 1235  
4232 4313 2234 1244 1353 3134 1334 1345  
4432 4423 2235 2245  
2135

### When spaces 5, 6 are 5, 4

2211 2121 2112 4211 2321 2231 3122 3131  
3311 3221 3212 5311 2421 3232 3133 4231  
4321 3421 4312 5421 3432 4352 4233 4431  
5331 3531 5322 5432 3434 4343 4235 4532  
5531 3542 5342 5443 4435 4543 5335  
5542 3544 5354

### When spaces 5, 6 are 5, 5

2312 2132 3113 2123 2233 2213 2422 2323  
2322 2332 4213 3223 3242 3313 2442 2433  
4422 3342 5313 3423 3245 4323 2454 2435  
4424 3453 5324 5423 3355  
3124 2134 2343 2224 4242 2424 3234 2334  
4224 3135 2345 3324  
4244

### When spaces 5, 6 are 5, 5

2244 2235  
3331 4442 5235 3454  
3532 4553 3435  
3543  
3545





# ELECTRONIC SECURITY

## WIRE IT RIGHT THE FIRST TIME

Test Article #57

by Greg Voorhees

Last month we covered how the electrical requirements of a system affect the size and type of wire being used. This month we'll cover the other aspect of wiring that affects the type of wire used - the environment.

Environmental concerns include the type of raceway or conduit being used (if any), the proximity of other conductors (wiring), area lighting, computers and computer rooms, whether the unit is buried or used for exterior use, etc. All factors must be considered when deciding on the type of wire being used.

For instance, let's return to an example used a couple of months ago. A vending service complex needs three electric strikes installed. One strike controls the gate to the parking area. The second controls the first floor dispatch and warehouse area door. The third controls the door to the second floor corporate offices.

Despite the fact that all three strikes are identical each has an installation environment that demands a specific type of wire.

In order to power the strike for the parking gate, wire is going to have to be run in a trench up to the gate. The correct wire and the correct burying depth and procedure are necessary if this installation is to be safe and sound from defects and future problems. These wires need to be guarded from water, moisture, and abrasions.

The strike wiring for the dispatch/warehouse door runs above a 2'x4' panel drop tile suspended ceiling. Normally standard twisted pair cable could be used. However, the ceiling is being used as the return air plenum for the heating and air-conditioning system. In a fire the fumes from burning standard wire insulation is highly toxic. In a plenum

ceiling these toxic fumes quickly spread through a whole building. This, of course, requires wire that is acceptable for plenum ceiling use be highly fire retardant to prevent the formation of toxic fumes.

The last strike encounters another environment. The walls are poured concrete not allowing for the wires to be run through the walls. The owners, however, don't want any exposed or surface mounted conduit on their walls. To accommodate the customer, the wires are going to be run through an existing conduit that runs 120V conductors through them. Again, in order to run the strike wire, the proper wire must be used.

Before going any further, there are two sources that need to be checked to assure correct wire and wiring procedures are followed. The first is the Authority Having Jurisdiction (AHJ). This is typically a building inspector or possibly the fire inspector. Regardless of what electrical and fire codes exist nationally or in other cities, the AHJ has the final word and all wiring should follow their guidelines. Many larger cities have their own code enforcement manuals that can be purchased. Obtaining one is a good idea.

For years alarm, access control and other low voltage equipment installers have enjoyed a rather restriction free reign around the US. Today, however, many cities are requiring even low voltage wiring to be run through metal conduit. This adds to both the expense and difficulty of the task. But if not followed, it may lead to fines and, where licensing exists, a loss of license. Know local laws and ordinances!

The second source is the latest version of the National Electrical

Codes (NEC) handbook. This manual covers all possible wiring and electrical scenarios. It covers wire types, sizes, insulation requirements, application requirements, power sources and requirements, etc.

Those without an electrical background may find this manual a little difficult at first. But after familiarizing oneself with it, the manual becomes an invaluable reference tool. Those with little or no electrical background should first take some electrical courses at a local college or find training through an experienced installer. Many community colleges offer classes covering this manual; it is highly



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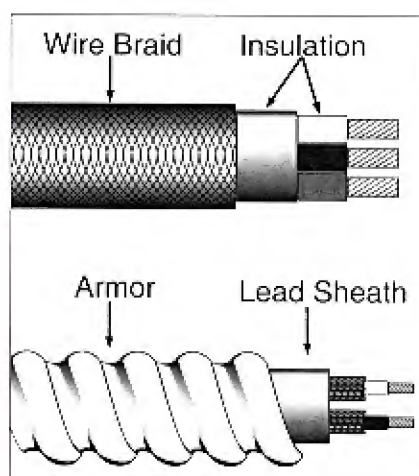
recommended. Most wiring questions can be quickly and easily answered through the NEC handbook.

There are two factors the environment dictates when it comes to wire and wiring: the type of jacket or insulation of the wire and the physical positioning of the wire (e.g. plastic or metal conduit, hangers, grommets, concrete raceway, etc.).

### Jackets And Insulation

There are many types of insulation and jackets with which a conductor can be covered. Most common for installers is the simple thermoplastic and vinyl coverings. Most interior installations accept this type of wire. (See illustration 1.)

Then there is signal carrying wire that must be protected from outside radio and static interference, often referred to as RFI (radio frequency interference), and ESD or electrostatic discharge (the shock received when touching another object after walking on carpet is an example). This type of wiring may be as simple as adding a twist to a pair of conductors, to the more elaborate shielded designs that incorporate wires twisted within a thin metal film and a bare grounding wire all within a



1. Wire comes with various insulating jackets. Choosing the correct one depends on the specifics of your application. Be smart and make the right choice the first time.

thermoplastic jacket. Still more sophisticated signal wiring may add a wire mesh jacket for better signal protection.

For exterior use, different considerations are made for wire insulation. Remember, here the wire is at the mercy of a range of ambient temperatures, ultra-violet (UV) rays from the sun, moisture, water, freezing, abrasions and vibrations.

Exterior wiring includes an array of protective jackets depending on its use. Thick UV and water resistant jackets are used to cover wiring exposed to open air. Buried conductors must be protected from abrasion and water. Again, there are many types of jackets available. One type is the steel armored covering (like the BX type wire) that protects against abrasions and an interior lead or rubber sheath to protect against water.

Another condition common to access control and alarm installation is plenum ceilings. Plenum ceilings have become very popular with the use of drop tile ceilings, and in these applications a plenum wire is used. The jacket on this type of wiring is made of a fire resistant material, typically Teflon, and is much more expensive than the standard wire.

Fire alarm wiring requires an NPLF rated wiring. Specialty wire is needed for areas where specific materials are stored. Class I locations include areas where explosive gas vapors are present. Class II locations are areas where there is suspended combustible dust (a granary, for example). Class III locations are for locations where non suspended

Trade Name	Type Letter	Max. Operating Temp.	Application Provisions	Insulation	AWG or kcmil	Thickness of Insulation	Mils	Outer Covering
Fluorinated Ethylene Propylene	FEP or FEPB	90°C 194°F  200°C 392°F	Dry and damp locations  Dry locations—special applications.†	Fluorinated Ethylene Propylene	14-10..... 8-2.....  14-8..... 6-2.....		20 30  14 14	None  Glass Braid Asbestos or other suitable braid material
Mineral Insulation (Metal Sheathed)	MI	90°C 194°F  250°C 482°F	Dry and wet locations.  For special application.†	Magnesium Oxide	18-16***** 16-10..... 9-4..... 3-500.....		23 36 50 55	Copper or Alloy Steel
Moisture, Heat- and Oil-Resistant Thermoplastic	MTW††	60°C 140°F  90°C 194°F	Machine tool wiring in wet locations as permitted in NFPA 79. (See Article 670.)  Machine tool wiring in dry locations as permitted in NFPA 79. (See Article 670.)	Flame Retardant, Moisture-, Heat-, and Oil-Resistant Thermoplastic	22-12..... 10..... 8..... 6..... 4-2..... 1-4/0..... 213-500..... 501-1000.....	(A) (B)	30...15 30...20 45...30 60...30 60...40 80...50 95...60 110...70	(A) None (B) Nylon jacket or equivalent
Paper		85°C 185°F	For underground service conductors, or by special permission.	Paper				Lead sheath

2. The NEC manual is filled with tables concerning conductors and applications. This is part of NEC Table 310-13: Conductor Applications and Installations.



Location of wiring method or circuit	Direct burial cable or conductors	Rigid metal conduit or intermediate metal conduit	Rigid nonmetallic conduit approved for direct burial without concrete encasement or other approved raceways	Residential branch circuits rated 120V or less with GFCI protection and maximum overcurrent protection of 20 amperes	Circuits for control of irrigation and landscape lighting limited to not more than 30V and installed with type UF or in other identified cable or raceway
All locations not specified below	24"	6"	18"	12"	6"
In trench below 2" thick concrete or equivalent	18"	6"	12"	6"	6"
Under a building	0" in raceway only	0"	0"	0" in raceway only	0" in raceway only
Under min. of 4" thick concrete exterior slab with no vehicular traffic and the slab extending not less than 6" beyond the underground installation	18"	4"	4"	6" direct burial 4" in raceway	6" direct burial 4" in raceway
Under streets, highways, roads, alleys, etc.	24"	24"	24"	24"	24"

3. This is just part of NEC Table 300-5 listing burying requirements for various conductors and applications.

combustible dust is a problem (textile manufacturing, for example).

Still, areas that contain caustic materials or solvents require wire with still another type of insulation.

All these areas require specific types of wire, connectors and termination techniques and procedures to maintain a safe installation. Know your application well, it determines the kind of wire needed. In some cases, it may not only save you the expense by doing it right the first time, it may also prevent a serious or fatal accident.

It should be noted that wire insulation ratings and applications have been standardized. A listing of the ratings, rating abbreviations, and applications can be found in the NEC manual. (See table 2.)

#### Physical Positioning

The physical positioning of wire is also dictated by the environment. When burying a cable it is important that it not only have the correct jacket, it is also critical that it be buried properly. Burying it at the correct depth in the correct material is covered in the NEC book. (See table 3.)

When hanging wire (between buildings, for example) it is critical that the wire be fastened and secured properly. An exterior wire is subject not only to the sun's UV rays and the freezing of winter, it is also subject to the vibration of wind and to its own weight. Proper hangers must be in place to protect the wiring.

Also covered in the NEC is how to properly run wire through a bored hole in wood (typically a floor joist or wall stud). According to the standard, if the hole is closer than 1-1/4" from the nearest edge of the wood it is necessary to place a metal plate of not less than 1/16" over the wood. The reason?

To protect the wiring from being pierced by nails or screws should drywall, paneling or another covering be placed over the wood.

When running wire through metal studs, grommets must be used to prevent the sharp edges of the metal from cutting into the wire insulation. Even if the wire is pulled without scarring or cutting the insulation, simple vibrations from doors closing and HVAC units can eventually lead to the metal cutting through the insulation and shorting the conductor.

When running signal wire, the wire

should not be run parallel, in the same raceway or in close proximity to other

*Continued on page 172*



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## EXTRA PROFIT THROUGH ACCESSORIES

*"When over 90 percent of the locks sold occur at the large retailers, locksmiths must focus on specialty items that require a higher level of product knowledge than retailers provide."*

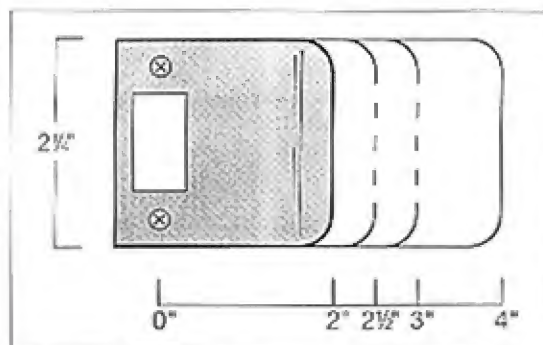
The theme for this month is door hardware. When most people hear door hardware, they think of locks, panic devices, and door closers. When applying such a narrow focus, you leave out one of the most important and profitable categories of door hardware – lock accessories.

In a time when over 90 percent of the locks sold in the United States occur at the large retailers, the local locksmith needs to focus on specialty items that require a higher level of product knowledge than the retailers can provide. Also, there is constant pressure to sell products that are not deeply discounted at the large retailers. Lock accessories fill both these requirements.

Don-Jo Mfg. has been making lock accessories for over 12 years. The company divides this product offering into five categories: strikes, latch protectors, wrap-arounds, filler plates, and flat goods. All together, Don-Jo offers over 450 line items to the locksmith industry.

The strike category was the first to be introduced by the company. At the beginning, this encompassed replacement strikes for both a deadbolt and key-in-knob lock. One year later, the company introduced a then-novel concept – security strikes. Simply by taking a standard strike and adding two offset holes and 3" screws, the installation increased door strength over 100 times. The security strike was a huge success. Soon versions in 8", 12", and 18" sizes were added. There is now a security strike available to fit just about any application.

Extended lip strikes are a recent addition to the strike category. (See illustration 1.) Designed to be used in situations when the lip of a normal strike does not reach out to the end of the frame, and the latch "rides" along the frame before reaching the strike, these strikes are available in a variety of sizes. They can be



1. The extended lip strike.

ordered in four different lengths (2", 2-1/2", 3" and 4"), two different heights (2-1/4" and 2-3/4"), and either full-lip or T-strike versions.

To add to the strength of a strike installation, a wraparound can be used on the door. Wrap-arounds are used for three purposes: remodeling, repairing, and reinforcing the door. Like the strike, the wrap-around greatly increases the strength of the lock installation. Don-Jo makes wrap-arounds from 4-1/2" high, all the way up to 20". There are versions available to accommodate backsets for door

Thicknesses of 1-3/8", 1-3/4", 2", 2-1/4", and 2-1/2" thick doors, and 2-3/8", 2-3/4", 3-3/4", and 5" backsets. Besides the standard entry locks, there are wraparounds available for use with the Simplex 1000 series lock, the Alarm Lock Trilogy and mortise locks.

All classic wrap-arounds come with built-in stainless steel threaded inserts. (See illustration 2.) These are designed to eliminate the loosening of the latch mounting screws when the door has been damaged, leaving little wood for the screws to bite into. Another exclusive feature is that all plates over 9" high are beveled. This allows for a quicker installation and a much tighter fit to the door.

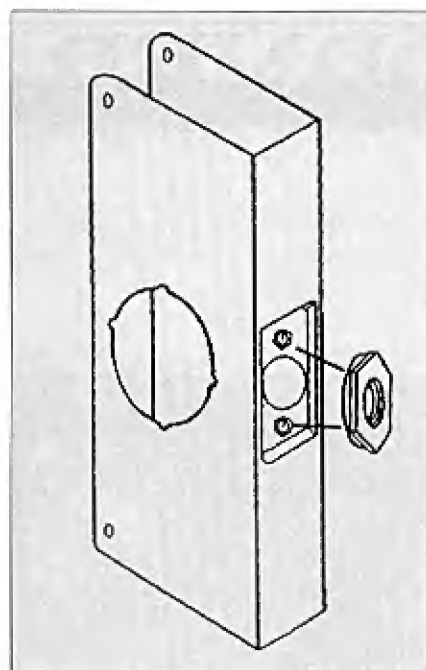
A third category of products is latch protectors. These items are

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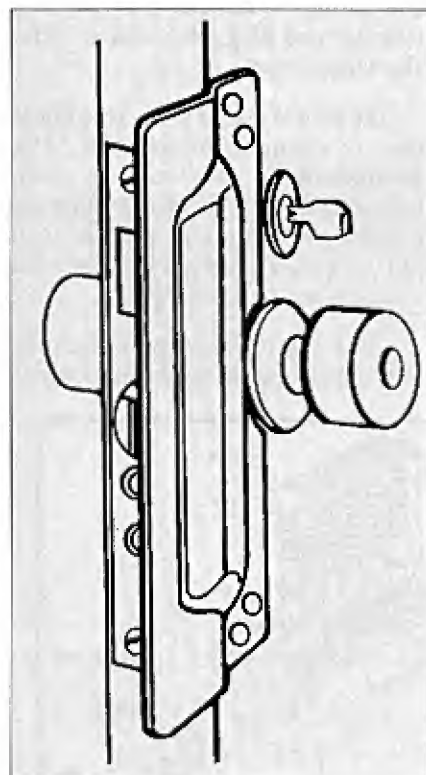




2. The wraparound door reinforcement with threaded insert.

designed to keep someone from gaining illegal entry by prying the door and frame apart, or by attacking the latch. Don-Jo currently offers 14 different latch protectors.

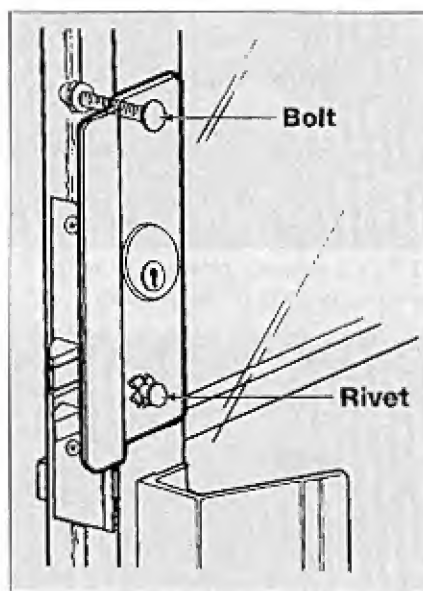
The first model the company offered, and still the most popular, is the LP-211 series. (See illustration 3.) These 3" x 11" plates are best utilized on out-swinging doors with mortise



3. The LP-211 latch protector.

locks. A smaller version of this design, LP-207 series, is available for use with key-in-knob locks.

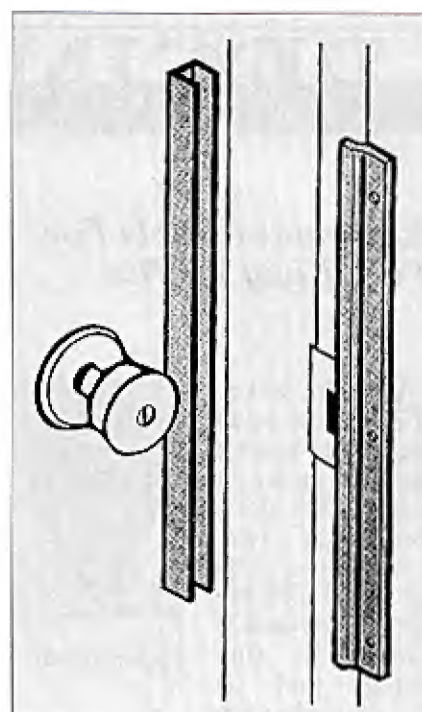
Another popular design, LP-307 series, was introduced to address a specific problem. The pull handles on a lot of aluminum entrance doors are located so close to the cylinder that it does not allow for through-bolting a latch protector below the lock body. The LP-307 is through-bolted only above the lock body. The bottom portion of the plate is secured by a unique, hammer-driven rivet that does not interfere with the lock body. (See illustration 4.) You don't even have to take the lock out to install it!



4. The LP-307 latch protector for narrow stile aluminum doors.

For use on in-swinging doors, Don-Jo introduced its interlock or ILP series. (See illustration 5.) This item features a unique design along with one-way screws to help prevent illegal entry. It is available in 6" and 12" versions. When you consider the number of in-swinging doors in this country (homes, apartments, dormitories, etc.), The potential for an aggressive locksmith is enormous.

Filler plates are also sold as specialty products. These plates are used when you take off the lock and need to fill in the holes, or when you are converting from one type of lock to another. Hole fillers, frame fillers, and hinge fillers are available in many sizes. Two of the most popular items are the filler plate kits. These are packages that contain all the items



5. The ILP series latch protector for in-swinging doors.

needed to fill a 161 or 86 cut-out. Also, there are a number of filler plates that are available in brass plated to match other items on the door.

These other items can include things like push, pull or kick plates. Don-Jo has these items available under its flat goods category. These plates serve two functions: to decorate and protect the door. They are available in a multitude of sizes and finishes. Also, available under this category are remodeler and sear plates. These items are designed to fit under the lock to cover up damage or unsightly marks.

You, as a locksmith, should market yourself as a hardware and security specialist. Don't be afraid to recommend accessory products when making a sale. Suggesting a kick plate to go with each new lock installation on a residence, or a latch protector for the new lock on a commercial building, should be standard operating procedure. Lock and door accessories not only provide profitable add-on sales, but give you the chance to further enhance your image as a hardware and security expert.

For more information on Don-Jo products, contact: Don-Jo Manufacturing, Inc., P.O. Box 929, Sterling, MA 01564-0929. Or call 800-628-8389, FAX 800-278-8202.





# BEGINNER'S CORNER

## Homemade Tools For Fast Easy Profits

A locksmith, beginner or old timer, has to be a little inventive at times. Work areas, benches, or service trucks have to be set up so tools are at hand and work is easy to do. One thing that is beneficial when you are pinning cylinders is a portable vise. This enables you to do the pinning work in your shop, in a service van, or in a building.

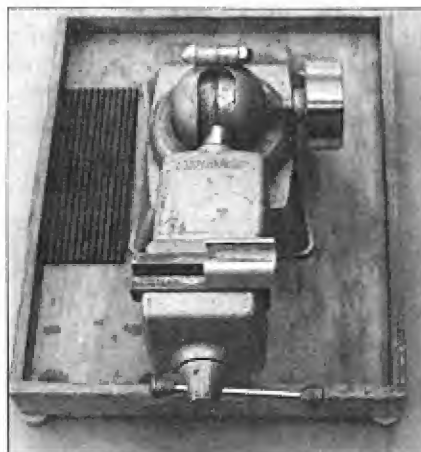


by  
Eugene Gentry

You can make a vise similar to the one shown in photograph one.

This was a vise that originally had a suction base that never seemed to hold. The base was removed, and the vise was bolted to a 1/2" piece of plywood, measuring about 8"x10". A border of 1"x1/4" material was placed around the plywood. Inside, a rubber corrugated piece was glued to the board, and four rubber feet placed on the bottom to keep it from slipping. This vise has served me well and I take it to the jobs I am working on.

To speed up the pinning jobs, I have been pinning some of the Kwikset cylinders ahead and keep some shiny brass and antique brass cylinders on hand as these are more popular. (See photograph 2)

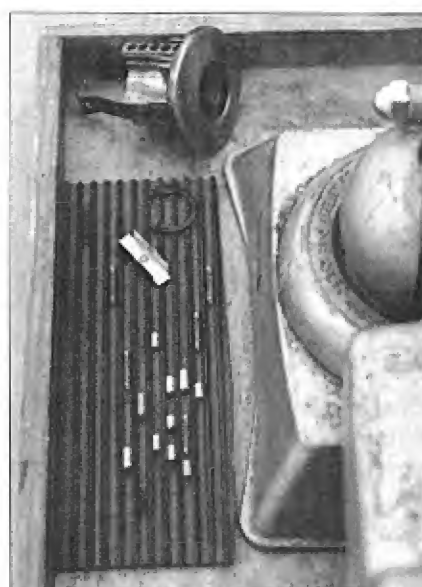


1. This homemade pinning vise makes working on locks a little bit easier.



2. Prepared Kwikset cylinders and the Quickpull by A-1 Security Mfg.

On this cylinder, to be rekeyed, we are using a pre-cut key with biting 14223. The cylinders and plugs are emptied, with the pins, springs and retaining clip placed on the corrugated rubber. (See photograph 3.) This is done to make sure the plug was not masterkeyed and that the springs are in



3. This piece of corrugated rubber helps keep things neat and in place.

good shape. This cylinder appears to have been rekeyed recently as the pins and springs look new. If needed, the cylinder and plug are cleaned with a cleaning solution.

The plug is placed in the plug holder that is clamped in the vise. (See photograph 4.) This one is a single holder, and is not suitable for larger or smaller plugs. You might think about purchasing a universal holder that offers several different sizes.

Place the pre-cut key in the plug. Use either a Kwikset pinning kit, or a

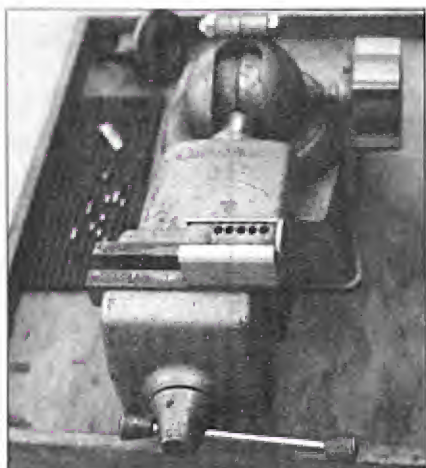


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4. This plug holder is another handy device for pinning cylinders.

universal pinning kit, and place the pins in the plug. Now, with the key in place, place the plug in the cylinder to see if it turns freely.

Remove the plug holder, and place the cylinder in the vise. (See photograph 5.) Put in the top pins, and replace any springs that look weak. Place a new cap on the top, make sure it is clamped tight, then put on a new retaining clip. Turn the key to see that it works properly.



5. Reloading the cylinder with the top pins, springs and cap.

One thing that has made my Kwikset rekeying work go faster is using the Quickpull plug puller by A-1 Security Mfg. This was featured in the Beginner's Corner in September 1992. When you rekey the cylinders ahead, and use the plug puller, you can rekey a Kwikset knobset in about 15 seconds. All you need to do is pull out the old cylinder and pop in pre-rekeyed cylinder.

Weiser locksets can also be rekeyed ahead, as the cylinder can be removed from the knob without the knob being removed from the door.

For more information on the Quickpull contact an A-1 distributor or A-1 Security Mfg., 3528 Mayland Ct., Richmond, VA 23233 or call 804-747-0095.



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## MAG DOOR MENDER

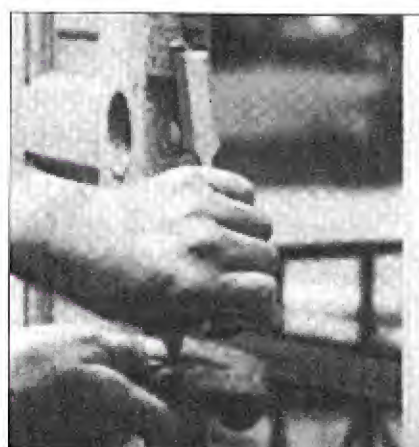
*"MAG's Install-A-Lock can reinforce the door against break-ins, while covering up any existing damage around the old lockset."*

Most residential burglars enter the house through the door, and they don't need a crowbar to do so. Even the strongest locksets are often held only by the thin layer of wood that remains after the lockset hole has been bored in the door. A solid blow by a booted foot is enough to smash the wood and unseat the door lock and/or latch. But the Install-A-Lock unit shown can reinforce the door against break-ins, while covering up any existing damage around the old lockset. Available in bright or antique brass, it also offers a decorative touch.

The Install-A-Lock is easily installed and is available for about \$20. Before purchasing the unit, check to be sure it matches your door's thickness, bore and lock backset. Most entry doors are 1-3/4" thick; other doors are 1-3/8" thick.



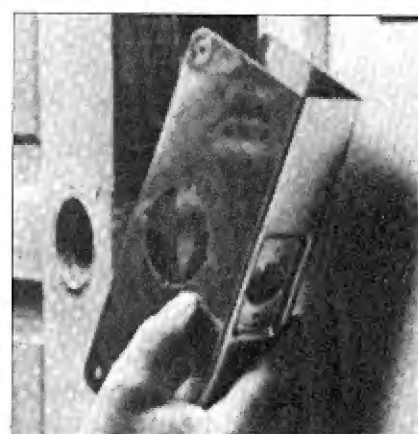
2. Use a razor knife or a wood chisel to trim away the wood so the unit fits around the latch mortise.



3. If the door is tight, you may have to cut a 1/32" mortise the length of the unit. Use multiple chisel cuts as shown.

Companion units available (not shown) include Uni-Force, a smaller device that reinforces deadbolt or locksets in the same manner as the Install-A-Lock shown; and Strike-3, a security strike for deadbolts that screws into the 2x4 studs around the door frame for added strength. For easy installation, use the following procedure.

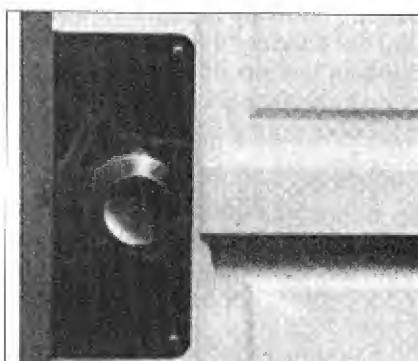
For more information contact a MAG distributor or MAG Engineering and Mfg. Inc., 15261 Transistor Lane, Dept. FH, Huntington Beach, CA 92649; or call 800-624-9942 (outside California) or 714-891-5100 (California).



4. Slip the unit over the edge of the door as shown and trim the door as necessary to ensure a proper fit.



5. Replace the door lock and tighten it, adjusting as you go to be sure the Install-A-Lock is properly aligned.



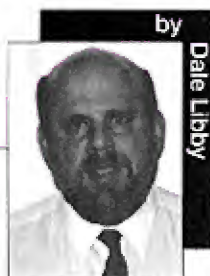
6. The brass Install-A-Lock provides a decorative touch as well as increased security against break-ins.



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by  
Dale Libby

## FUN WITH A DIEBOLD TL30 CASHGARD

*"In the world of money chests, there are no light hitters. Most of these units are hard to open and very heavy."*

In this article Dale discusses moving a TL30 CashGard money chest and then tells how he and Little Tommy opened it in 12 minutes.

In the world of money chests, there are no light hitters. Most of these units are hard to open and very heavy. So, for the best of both worlds, we will move and open a small TL30 Money chest made by Diebold, one of their CashGard Series. In my next article, I will discuss servicing techniques and optional opening strategies for these round lug door money chests that use the dreaded and diabolical 180-55 Tori-bolt combination lock mechanism.

As with all safe stories, it starts out with a frantic customer wanting immediate service, but this time with a twist. A national store remodeling service is refurbishing an old fast food

chicken store to be a new fast food chicken store. They have a problem. There seems to be a large safe in the way of their putting in a new kitchen. They must have it moved immediately!

A luke warm call at first, but it heats up quickly. The contractor then states that he will give the safe to us when we move it, and (get this) he will pay up to \$900.00 for us to transfer and relocated the locked safe anywhere out of their store. He also states that he believes that the safe is cemented to the floor, for none of his people (carpenters) can budge it.

A service technician was immediately sent to look at the safe in question. It was the unit shown in photograph one. It was a TL30 Diebold CashGard unit about 30" high. The technician drove an expendable screw driver under the corner of the unit to see if it indeed was attached to the floor. It was not. The corner of the unit raised up about 1/4". It was free standing, but heavier than expected.

After getting the above information and discussing a fair and equitable moving price, Tom and I, (and Tom's brother Mike) set out to move and acquire this nice prize, and get paid for doing it. We took with us a lifting device, a Johnson Bar, and several metal pipes of various sizes.



1. Diebold TL30 CashGard Money Chest.

A Johnson Bar (that is what I have called it for years although in different parts of the country it will be called something different) is a long wooden fulcrum with a steel base. It is used for moving heavy equipment and it is an incredible tool. It rolls on two extremely strong steel wheels. To paraphrase, give me a Johnson bar (lever) long enough, and I will move the world.

Photograph two shows the Johnson Bar inserted under one side of the safe still in the store front. After raising the edge of the chest up enough, pipes are inserted under the base of the money chest. The unit is then rolled to the waiting vehicle to be loaded. Photograph three shows the chest resting on pipes waiting to be rolled down a hallway and over two thresholds to the outside of the



2. Using a Johnson Bar to elevate a corner of the chest.



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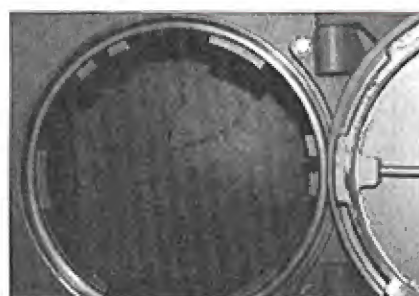




3. Pipes used to roll Diebold chest.



5. Big TL30 next to smaller TL30 CashGuard.



6. Copper layer to thwart torching (TL30).



4. Unit outside, waiting to be transported.

building. Photograph four shows the unit outside and waiting to be safely loaded onto the truck.

The loading and unloading of the Diebold CashGuard from Hell was accomplished with no casualties, although it was close at one point. I saw my life flash before me only two times. Luckily, I saw only the good points. (I may discuss this move at a later time.) It certainly taught me a lesson. Let the guys who move BIG safes move them. Pay them to do it. It is not worth the risk of injury or death for a few \$\$\$\$.

Once we got the chest back to Tom's well appointed and spacious Locksmith Shop (Powers Safe &

Lock) we placed it next to its larger cousin, a TRTL30 CashGuard by Diebold. (See photograph 5.) Both these units use the same exact combination lock, the (again) dreaded and diabolical (Demonic & Devilish) 180-55 combination lock. The only difference between them is the length of the bolts that secure the inner door to the outside diameter.

What makes the larger unit a TRTL30 is the addition of a copper ring outside the edge of the door and a copper plate layer inside the door proper. In photograph six one can see this copper layer outside the inside diameter of the door opening above the door locking lugs. One can also



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see the cut-outs in the door where the locking bolts rest when the door is fully locked and rotated. They appear, in this photo, at 3 o'clock, 7 and 11 o'clock relative positions.

The Fantastic Safe Opening Guides by David McOmie tell how to open one of these units from the side. Just drill a hole 3-1/2" back from the front of the door in line with the dial center. Insert your right angled borescope and read the combination through the key change hole. Add the appropriate numbers to each of the 'found numbers' and the lock will open.

Well, I thought that I would like to open this unit from the top rather than the side. I do not like to grovel when opening a safe. Using the larger adjacent unit and the drawings that come to members in the NSO (*National Safeman's Organization*), I had to adjust my drill point accordingly. This can be seen in photograph seven. When drilling from the side, the key change hole is directly in line with the center of the dial ring.

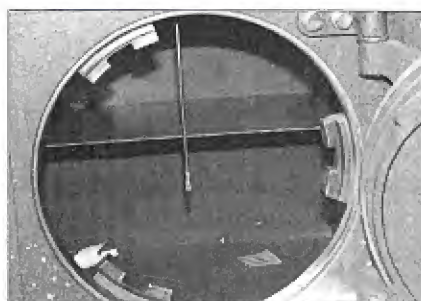


7. Marking opening 3-1/2" back, 1/2" left.

When drilling from the top, one must take into account the 1/2" offset that the key hole is from the dial center. Just mark and drill 3-1/2" from the front of the door with a 1/2" offset to the left toward the opening side of the door.



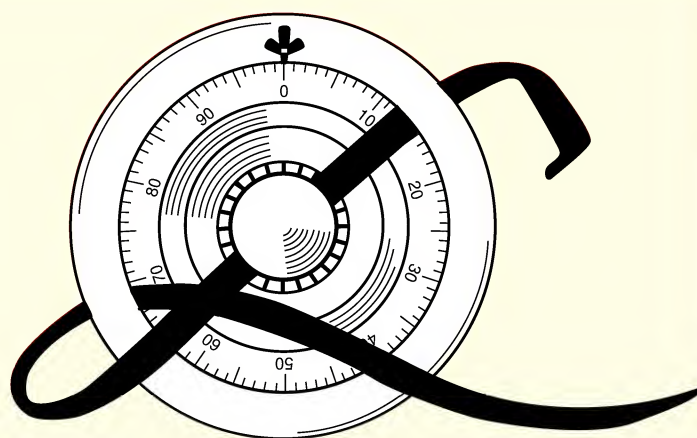
8. Little Tommy scoping the change key hole.



9. Borescope through the top shows position.

In photograph eight Tom can be seen scoping out the change key hole. Photograph nine shows the open door with the end of the borescope inserted from the top.

These units can be touchy to open even with the correct combination. After determining the combination through the change key hole with your long, right angle view borescope, just add about seven numbers to the relative combination. After dialing, be sure to osculate the dial at the drop-in position to open the unit. It took Tom about 12 minutes after marking the spot on the top of the safe to drill through the cement and steel and to dial open the Diebold CashGard unit. Well Done. Open and Prosper.



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## MAJOR DRILL GUIDE

*"Until the HIT-22, installing a mortise cylinder in the proper location was a hit or miss proposition."*

### Purpose Of Tool

To accurately drill the cylinder hole for a mortise lock when installing a new lock, retrofitting from a passage set to a keyed set, or re-drilling an out of align cylinder hole.

Until now, installing a mortise cylinder in the proper location was a hit or miss proposition. With the new HIT-22 and three easy steps, it is always in the

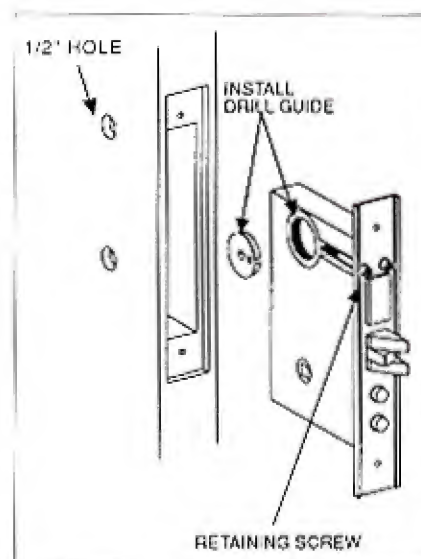
right spot. (See illustration 1.)

### Installation

**Step 1:** Drill a 1/2" to 5/8" hole in the approximate location of where the center of the cylinder hole should be on the door. Place the HIT-22 drill guide in the cylinder hole of the mortise lock and secure with the cylinder retaining screw. Install the mortise lock with the HIT-22 in the door. (See



1. Major Manufacturing's HIT-22.



2. Place the drill guide and mortise lock into the mortise pocket.

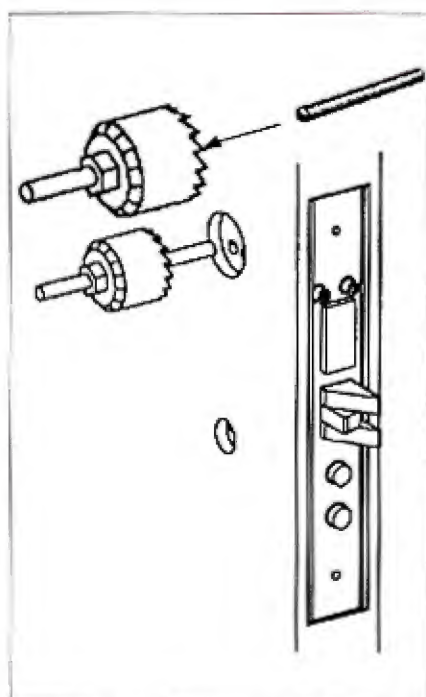
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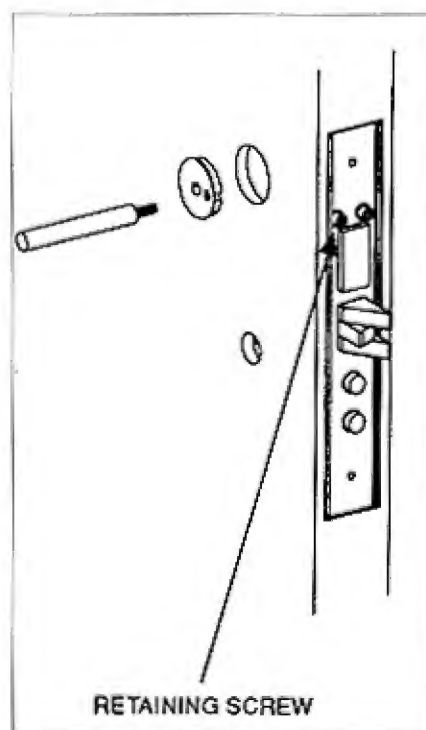




3. Insert the drill blank into a 1-1/4" hole saw and make the hole.

illustration 2.)

**Step 2:** Remove the pilot drill from a 1-1/4" hole saw and replace with the drill blank that came with the kit. You can see the HIT-22 drill guide through the hole drilled in step #1. Place the hole saw pilot in the drill guide and drill the cylinder hole. (See illustration 3.)



4. Remove guide and install trim.

**Step 3:** The cylinder hole is large enough to remove the HIT-22 without having to take the mortise lock out of the door. Simply screw the extractor handle into the HIT-22 guide, loosen the cylinder retaining screw, and the HIT-22 can be removed. (See illustration 4.)

The cylinder hole is now perfectly centered. Install the mortise lock trim, and the job is quickly completed. Use the correct key to check the lock and door for proper operation from both sides of the door.

The ease of use and the accuracy of the HIT-22 makes the normally tedious job of mortise door preparation faster and more profitable. A definite plus for any locksmith.

The HIT-22 is supplied with two drill guides, a blank hole saw pilot and extractor handle and a full set of instructions.

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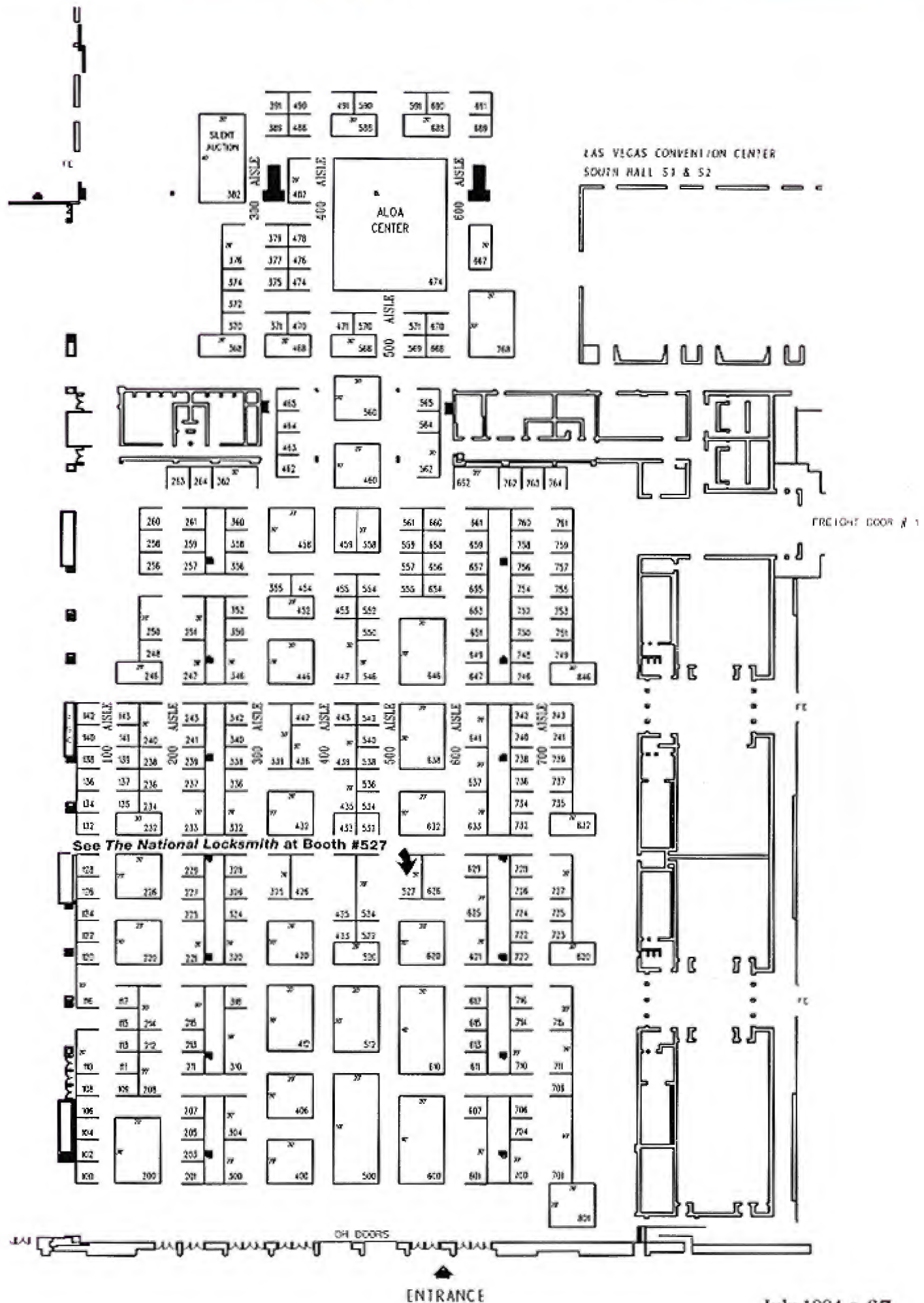
## Associated Locksmiths of America International Trade Show

July 21-23, 1994, Las Vegas Convention Center

# Exhibitor Listings & Booth Map

A-1 Security Mfg Corp.....0811	Folger Adam Co.....0352	Patch & Co.....0726
A.L.O.A.....0382, 0674	Fort Knox Security Products.....0110	Pacific Security Products.....0637
Aable Locksmiths.....0617	Fort Lock Corp.....0420	Pado Lock.....0243
ABA Locks Mfg. Co., Ltd.....0102	Framon Mfg. Co., Inc.....0710	Palmer Security Products.....0654
Ablo Security, Inc.....0520	Fried Brothers Inc.....0423	Panel Mfg. Co., Inc.....0758
Abus Lock Co.....0801	Gardall Safe Corp.....0438	PDG Ind.....0738
Access Control Magazine.....0491	Glynn Johnson.....0540	Perma Vault/Bonafide.....0615
Acme Security Systems.....0709	Guardian America.....0661	Perry Blackburne, Inc.....0117
Adams Rite Mfg Co.....0601	Gunvault, Inc.....0143	Personal Safety Corp.....0725
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Advanced Hardware Technologies.....0550	Hill Security products.....0536	Pro-Lok.....0524
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Alert Centre, Inc.....0256	International Electronics Inc.....0735	RA-Lock Co.....0716
All-Lock Co.....0304	Jackson Exit Device.....0724	Reed's Security Reporter.....0711
America Key Boxes.....0740	Jet Hardware Mfg., Co.....0607	Robert Skeels & Co.....0324
American Lock Co.....0620	JLM Wholesale, Inc.....0720	Rofu Int'l.....0621
American Lock & Supply.....0220	Kaba High Security Locks.....0201	Rutherford Controls Int'l.....0232
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Eclipse Industries.....0355	<b>The National Locksmith.....0527</b>	Von Duprin, Inc.....0542
Electric Lock Supply.....0741	National Security Safe Co.....0569	WD 40 Co.....0443
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Fibertron.....0722	Optex USA, Inc.....0748	Winner Int'l.....0723
Foley-Belsaw Co.....0468	OSI Security Devices.....0554	Yale Security, Inc.....0214







## KEYING WITH MASTER PRO SERIES PADLOCKS

*"The new Pro Series padlock now accepts IC core, Medeco and various commercial and residential keyways."*

About one year ago, Master Lock Company introduced its Pro Series® High Security and Weather Tough® line of padlocks, specifically designed for commercial and institutional markets.

The extensive two years of research that Master Lock conducted before Pro Series was introduced, helped the company develop a product line to meet the needs of locksmiths, distributors and end users.

Research showed that the highest priorities for a new padlock line were increased security and improved weather resistance. The initial Pro Series offerings met that criteria.

In addition, the research indicated a need for a padlock line that would be compatible with existing padlocks and door hardware keying systems.

This year, Master Lock is expanding its Pro Series line with eight padlocks that meet these keying system compatibility needs. The new padlocks are expected to ship in August.

### Pro Series Expansion

While retaining the same security, strength and weather resistance as the current Pro Series line, the new padlocks accept:

- Six- or seven-pin Best and Best-type interchangeable cores such as Kaba PEAKS-PBST, PKS and KSP, etc.
- Medeco keyways.
- Various door hardware keyways, including Yale #8, Weiser-Falcon, Corbin 60/59, Master Lock, Kwikset, Schlage C through L and Arrow keyways.

### Interchangeable Cores

The Master Lock Pro Series has four padlocks that accept the Best-type Interchangeable Cores.

Because many companies want the convenience IC core systems offer, some modifications to Master's padlock body were made to accept both six and seven pin cores.

While modifying the lock body, Master also enhanced some design elements to improve the padlocks' performance. With the IC cores, because the extension driver assembly is critical, it is all steel and has been "beefed up" to assure a

solid, secure connection.

These Pro Series padlocks are shipped without (WO) cylinders so existing cores can be used without a major increase in inventory.

### Medeco High Security Cylinders

Medeco cylinders and keying systems offer some of the highest levels of key control available. Because the system has to be proprietary in order to maintain this higher level of security, Master Lock determined that the optimum method to meet the needs of locksmiths and end users was to develop a padlock that accepted these cylinders.

These four Pro Series padlocks are compatible with Medeco and are also shipped WO cylinders.

Pro Series also provide a unique selling opportunity because the padlocks offer enhanced security features.

### Door Hardware Cylinders

Best-type interchangeable cores and Medeco cylinders are used for both padlocks and door locks. There are, however, many more commercial-grade door hardware products on the market.

Again, to accommodate the locksmith and his customer, the same four Pro Series padlocks that accept Medeco cylinders can also be ordered with a variety of commercial door hardware cylinders, including Kwikset, Yale, Schlage, Corbin, Arrow and Master door locks.

These products can be shipped WO for use with Master Lock-supplied cylinders. However, Master

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Lock also supplies these eight cylinders with zero-bitting.

**M**aster cylinders feature anti-drill pins to help prevent drilling out the cylinder, plus the retainer is made of hardened steel with a curved face. The hardened steel provides substantially more cylinder pull resistance than a typical brass plug. In addition, the curve makes it difficult for a drill to "dig in," which helps prevent drilling out the cylinder.

#### **Detailed Pro Series Description**

Following are detailed descriptions of the latest Pro Series padlocks:

**No. 64212** – 1/8" Weather Tough™ laminated steel padlock with Xenoy® thermoplastic lock body cover, boron alloy steel shackle and rekeyable design. The shackle diameter is 5/16" and standard shackle length is 1-1/8". Extra-long 2-3/8" or 5-5/8" shackles are available. Compatible with Best-type I.C. cylinders, shipped WO.

**No. 64272** – 5/8" Weather Tough™ laminated steel padlock with Xenoy® thermoplastic lock body cover, boron alloy steel shackle and rekeyable design. The shackle diameter is 7/16" and standard shackle length is 1-3/8". Extra-long 1-7/8" shackles are available. Compatible with Best-type I.C. cylinders, shipped WO.

**No. 65212** – 1/8" High Security laminated steel padlock with shrouded, iron shackle guard; boron alloy steel shackle, and rekeyable design. The shackle diameter is 5/16" and standard length is 3/4". Extra-long 2-3/8" or 5-5/8" shackles are available. Compatible with Best-type I.C. cylinders, shipped WO.

**No. 65272** – 5/8" High Security laminated steel padlock with shrouded iron shackle guard; boron alloy steel shackle, and rekeyable design. The shackle diameter is 7/16" and the standard length is 3/4". Compatible with Best-type I.C. cylinders, shipped WO.

**No. 6621** – Same features as No. 6421. Compatible with Medeco cylinders or Master Lock supplied commercial-grade door hardware cylinders. Can be shipped WO or with door lock cylinders zero bitted.

**No. 6627** – Same features as No. 6427. Compatible with Medeco cylinders or Master Lock-supplied, commercial-grade door hardware cylinders. Can be shipped WO or with door lock cylinders zero bitted.

**No. 6721** – Same features as No. 6521. Compatible with Medeco cylinders or Master Lock-supplied, commercial-grade door hardware cylinders. Can be shipped WO or with door lock cylinders zero bitted.

**No. 6727** – Same features as No. 6527. Compatible with Medeco cylinders or Master Lock-supplied, commercial-grade door hardware cylinders. Can be shipped WO or with door lock cylinders zero bitted.



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by  
Carl Cloud

## A DIEBOLD VAULT

*"A vault is just an oversize safe. Especially the plate door variety, but a whole lot more fun!"*

A pawn broker had purchased a vault door from an old bank building that was being torn down. He had a mini vault built in the rear of his store and the used door installed. The Diebold vault door was very impressive with its large crane hinge, dual compression bars and spoke wheel. (See photograph 1.)



1. The impressive looking Diebold vault door.

Gary Guinn, owner of Specialized Security, was called when the vault door failed to open. The door had been opening without any problems since its installation, about three years ago. Today, everything felt just the same, but the combination wouldn't unlock.

The owner furnished the combination, but the turns were not complete. It stated, 5 turns left, 3 turns right, 2 turns left and 1 turn right to stop or open. This sequence of turns for a four-wheel lock meant one of two things. (a) the first two wheels were set on the same number, or (b) the outside ring of the first wheel had been removed and only the inner hub was intact, acting as a spacer.

Gary first tried to detect the number of wheels within the lock with the help of a contact amplifier. (See photograph 2.) There was a solid pickup of the first three wheels and an almost undetectable 'tick' where the fourth wheel should be. This lead us to believe the heavy outer ring of the wheel had been removed and the 'tick' was only the pickup of the fly on the center hub. An attempt to manipulate didn't give any positive results.

One sure way to find the problem is to go in and look. The pawn shop owner expressed his desire to preserve the original dial and ring. A drill location was selected just outside the dial ring at about 15.

The use of a pressure bar rig pushed through the 1-1/4" thick plate door in



2. Using a contact amplifier to diagnose lock trouble.



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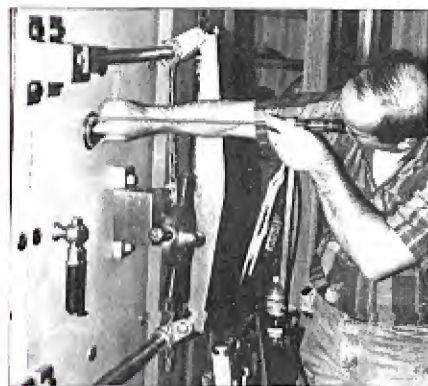


short time. A scope into the hole verified all four wheels were operating within the lock. A combination of the wheels was determined and transferred to the drop area.

After numerous transferring attempts, the lock would not open. Checking back to our drilled hole, it



3. Drilling for the gate and fence.



4. Scoping through the new hole, the door opened in a snap.



5. Inside the old door.

was found that the first wheel reading was not consistent. The wheel may have a sticking fly, or being moved from its number by the second wheel, or possibly the wheel had become unlocked.

We decided to drill another hole to view the wheel gates at the fence. A hole was drilled at about 85. When the drill bit should have broken through the case, brass shavings were still coming out of the hole. It was obvious the hole location was not in a clear area.

Rather than continue drilling and possibly damage a lock part, a third hole was drilled. (See photograph 3.) From this hole it was a perfect view to align the wheel gates to the fence. Gary popped his scope into the hole and in minutes the vault door was open. (See photograph 4, a long look for a short distance.)

What a beautiful old door! (See photograph 5.) The entire brass and bronze interface had a machine swirl finish and gave the impression of being solid gold. The door offered sixteen horizontal locking bolts plus two upper and lower bolts. A vacant area above the lock case revealed a previous location for a time clock. Photograph six is a close up of the lock with its cover removed. Note the beautiful etched design on the locking bolts' carriage bar.

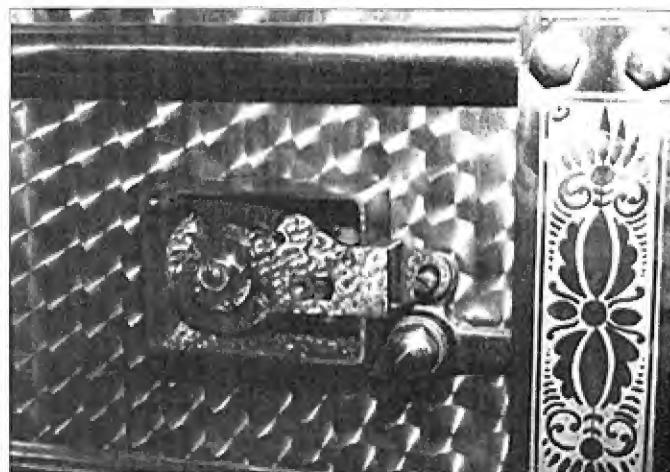
Upon removal and disassembly of the lock, the first wheel was found unlocked. This accounted for the light 'tick' sound when we attempted to pickup the wheel. The first and second wheels had been set to one number - the reason for the 5 turns left, 3 turns right

sequence. The unlocking of the first wheel caused a new unknown number to be created in the combination.

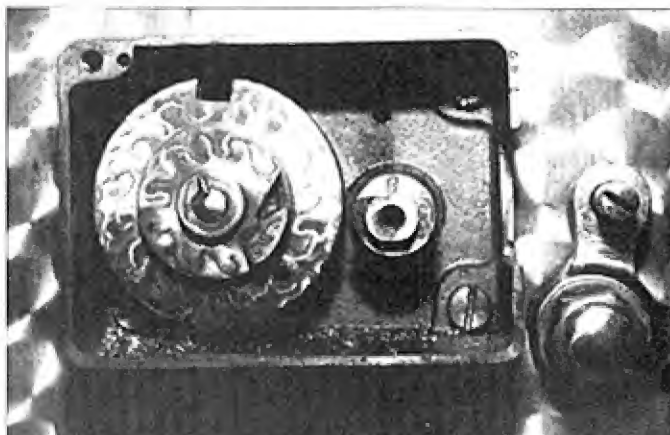
Photograph seven shows the lock with the one piece locking bolt and lever removed. The second drilled hole had hit the securing post of the bolt/lever assembly. Continued drilling of this hole could have created some serious damage. The third and final hole can be seen just above post.

Gary did a great cosmetic job of repairing the drilled holes. He first plugged and welded the holes shut and ground the welds flush with the door. He purchased a highly polished, thin brass disk with a diameter to just cover the repaired holes. The cleaned and polished brass dial and ring were mounted on top of the disk. The disk enhanced the area of the dial and looked to be a part of the original design.

A vault is just an oversize safe. Especially the plate door variety. The work or method is about the same as opening an old 'E' rate chest, but a whole lot more fun!



6. An old beauty with the cover removed.



7. Up close with the locking bolt and lever removed.



## INSTALLING THE ROTON CONTINUOUS HINGE

*"As locksmiths, we often run into hardware problems that are caused by a damaged door. A sure, fast and inexpensive way to rehang a door is with a continuous hinge."*

As locksmiths, we often run into hardware problems that are related or caused by a damaged or badly hung door. (See photograph 1.) A sure, fast and inexpensive way to rehang a door is through the use of the continuous hinge. (See photograph 2.) Following a few simple steps, installing a continuous hinge is not only easy, it's profitable. In this article we'll cover an installation of the Roton continuous hinge by Hager. (See photograph 3.)



1. Here's a sight often seen. A hardware repair is often the result of a badly damaged door or frame.

Before removing the door, check the rabbet-to-rabbet dimensions of the frame, top and bottom. The same rabbet-to-rabbet dimensions should be maintained after the door is removed, to allow proper clearance of the door. Then check the hinge jam for plumb. Make any needed adjustments.

If the frame is not solidly attached to the wall or framing system, repair it before hanging the door. The operation of any hinge, lock or door closer is only as good as the rigidity of

the framing system. Be sure the jams are vertically aligned. Make certain the header is level and mark it accordingly. Remove the door from the frame to prepare for installation.

Working with a clean, solid frame is important, so repair frame mortar, fill old hinge cut-outs, and repair structural door defects before beginning.

Start by installing the hinge to the frame. Position the hinge on the face of the frame with the hinge leaves open, 1/16" below the lowest point of the header rabbet.

This locates the top end of the hinge even with the top edge of the

door. Drill for the #12 sheet metal screws or use the self-drilling screws supplied. With mortar filled frames it may be necessary to mark screw locations and drill for the screws. However in most cases, simply mounting the hinge with the self-drilling screws provided is enough to mount the hinge to the frame. (See photograph 4.)

Now you're ready to place the door in the opening. For your safety, make sure the door is secure, or that someone else is holding it. Place wooden shims at the header to provide the proper 1/16" clearance between the top edge of the door and the lowest point of the header. Your bottom door clearance should be at least 1/4" above the threshold. Lock

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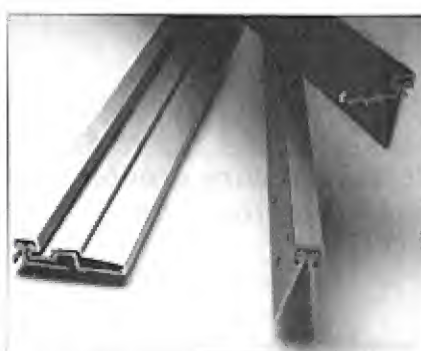
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2. A repaired and rehung door.

sides should have 1/8" clearance. Check all door clearance measurements. Using full-surface Roton models requires very little hinge side clearance. If necessary, the door may be pushed against the hinge



3. The Roton continuous hinge by Hager Hinge.

side frame rabbet. With the door positioned properly within the frame, you're ready to attach the hinge to the door. (See photograph 5.)

Install the panhead screws to secure the hinge to the door. Now, remove the shims and check the door for smooth operation. Also check the lock-side clearances and lock operation.

Mark the locations of the sex-bolt holes, using a 3/8" by 1" transfer punch. Drill holes all the way through the door, first using a 3/16" drill bit,



4. After prepping the frame the hinge is attached.



5. Place and shim the door in the frame.

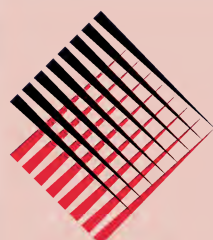
and then a 3/8" drill bit. From the opposite door side, redrill the holes partially to remove any burrs.

Attach the hinge leave to the face of the door with the sex-bolts, and the 1/4"x20 shouldered screws provided. Make sure the screws are tight, and the door swings properly. The Roton hinge is now installed.

The snap-on molding can now be placed over the hinge to cover the fasteners for added security. Hook the edge of the molding under the outside edge of the hinge leave, for the full height of the door. Using a wood block and hammer, start at one end and press or tap the loose edge of the cover, working along the length until the entire molding is seated.

Test the molding for slipping by tapping very lightly on the top edge. When the molding is even with the top end of the hinge, tighten the set screw with the Allen-wrench provided. With the door and hinge in place, you're ready to clean up and head home.

For more information on Roton continuous hinges, contact a Hager distributor or call Roton at 800-325-9995.



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## THE 802 ELECTRONIC DEADBOLT

*"It is important to emphasize that this is an auxiliary type of lock, not for singular security."*

This month I'll introduce you to the Southern Steel model 802 Electric Deadbolt.

**Lock Size:** 4-9/16"X1-3/4"X9"

**Lock Weight:** 9 pounds

**Bolt Size:** 5/8" diameter

**Bolt throw:** 9/16"

**Application:** Provides swinging doors with auxiliary security locking and unlocking from a remote location.

**Function:** Unlocked electrically from remote console, or by key switch or pushbutton at the door. Automatically deadlocks when door is closed.

### Technical Data:

Standard Finish: Galvanized (face plate is US4; optional US26D).

Cover: Cold rolled steel plate.

Case: Cold rolled steel plate.

Lock Bolt: Stainless Steel.

Cylinders and Keys: Optional.

Electrical: Standard 115 VAC, 1 phase, 60Hz, 2.5 amps inrush current, 0.6 amps seated.

Optional 24 VDC, 6.3 amps inrush current, 0.7 amps seated current.

### Standard Features:

No protruding deadlatch mechanism accessible to inmates

when door is open.

Designed for mortise jamb mounting in door frame.

Automatic deadlocking.

Non-handed (except when

equipped with a key cylinder).

Activated by dual 115 VAC solenoids for power locking and unlocking.

### Special Versions:

802KR equipped with a mogul cylinder for mechanical unlocking by key at the door. Activated by dual 115 VAC solenoids for power locking and unlocking.

802FL Activated by one 24 VDC solenoid for power unlocking. Bolt is extended automatically when power is interrupted. (FL = Fail Lock)

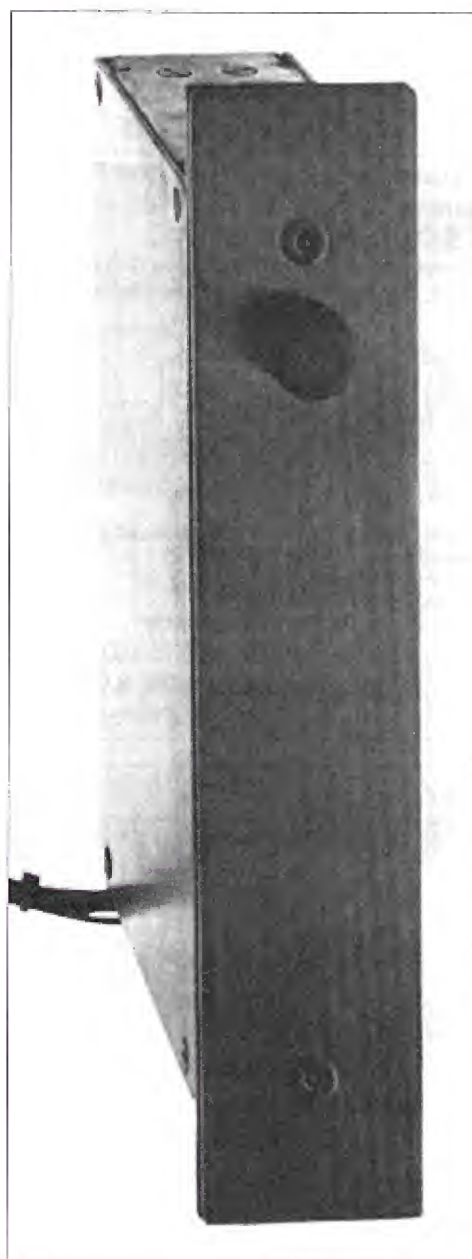
802FU Same as 802FL above except bolt is automatically retracted when power is interrupted. (FU = Fail Unlock)

Note: Special casings for surface mounting can be furnished for adding to existing systems. Specify "RM."

Key operation of this device can be provided from hinge side, stop side or both sides for all 802 series locks.

It is important to emphasize that this is an auxiliary type of lock. Although I have personally installed similar types of electric deadbolts in commercial applications, in detention applications this lock is not suitable for singular lock security.

Address questions regarding detention hardware, its uses and applications, to Rick Segerstrom, c/o The National Locksmith, 1533 Burgundy Pkwy, Streamwood, IL 60107.



The Southern Steel 802 electronic lock.



# LIGHTER SIDE

## Changing Places

"Where is everybody?" I asked. I had just arrived for work and found no one in the shop except me and Don, despite the fact both service vans were parked outside.



by  
Sara Probasco

"Didn't I tell you? The guys are off, today. It's just you and me, Babe." Don grinned as he twirled me around in a little two-step.

He often forget to tell me little insignificant things. Like the time the insurance nurse called to say she would be coming by at nine one morning to give me a check-up for a potential change in my health insurance. That happened to be a week when my mother, daughter, and son, along with their families, were visiting—fourteen, in all.

High-stepping over sleeping bags, toys, and other assorted paraphernalia while trying to feed the multitudes pancakes and sausage had been an exercise in aerobics that Jane Fonda never dreamed of. When I finally reached the shop at nine-fifteen, my pulse rate was still in the target range, and my blood pressure had gone out the top. The nurse, peeved over my tardiness, was in no mood to delay her findings long enough for my stressed body to simmer down. Need I say, I did not get the change of policy I desired?

At least, this time Don's oversight in communication wouldn't cause any real problems. Upon opening our full-line retail store, the two of us had run it quite well for a couple of years, before hiring additional personnel. There was certainly no reason the two of us couldn't take care of business for a day or two on our own.

Besides, since taking on the other workers, I had been relegated primarily to a desk in the front office. It would be kind of nice to put my hands to cutting keys and do simple repairs, again.

Then Don dropped the other shoe.

"I'll be out of the shop most of the day. I have a safe to get into down in Eagle Pass, so you'll be on your own."

"Just be sure you give me a phone number, in case I need to ask you something," I asked.

"This is a ranch way out in the country. I'm not even sure they have a phone, and I'll be out of range for my cellular unit. Just do the best you can. Anything you can't handle, I'll take care of when I get back."

That sounded good. After all, what could be so urgent that I couldn't either handle it myself or promise it for tomorrow?

As he drove away, butterflies invaded my stomach. I remembered the feeling from the first time he had left me alone to run the shop. Of course, that was years ago, when we were first getting started, but the feeling was back.

"Look," I told myself, "you know a lot more now than you did then. You can identify and cut all kinds of keys with ease, you impression fairly well, you know most of the inventory, and repinning is no problem. What are you afraid of?"

Nevertheless, the butterflies remained. I knew that now, contrary to my earlier experiences, I would be expected to really be on top of things. After all, we had operated this shop for nearly nine years. The public was used to having Don and the guys know exactly what to do and do it

right. They wouldn't be so tolerant of my mistakes now as they were when we were fledglings in business. It was like having your second baby; everybody, including you, expected you to know all about it, but knowing what all was involved, you felt less well equipped to handle the situation than you had the first time around.

"Oh, well," I thought. "I can do it. No sweat."

Don was scarcely out of range when a man came into the shop wanting to purchase three Weiser entry locks, keyed to his own key. He said he was from out of town and in a hurry. Could I do the re-keying while he waited?

"Sure," I replied. "No problem."

After finally locating the locksets he wanted among dozens of other types and styles on the shelves in our stock room, I began to wrestle with the new see-through packaging. It wouldn't tear and there was no pull-corner. All I could find to get into the package was a rusty X-Acto knife I uncovered in a box under the workbench.

Meanwhile, my customer was growing impatient. "How much longer are you going to be?" he asked. "I need to be back up there before noon."

Moving confidently to the workbench, I reached for the pinning kit. It wasn't where it used to be.

The butterflies came surging back.

After frantically plundering around the shelves, I finally found it. Apparently, the old kit had been replaced by a new one of a different size and color. No wonder I hadn't recognized it.

*Continued on page 82*



*Continued from page 80*

Now to get the lockset open.

I turned it this way and that, looking for a punch-hole. Then it dawned on me, Weiser had no punch-hole. Pleased with myself for finally remembering the difference, I tightened the vice on the tail-piece, holding it at tension so I could get the knob off. Then I inserted the key and reached for a follower to remove the cylinder. It, too, had apparently been moved to a new location. Well, I didn't have time to look for it now. I would use this other one. It wasn't quite the right size, but it should do.

Wrong!

I lost half the pins and springs before I realized what was happening. Rather than take time to replace them under pressure, I carefully laid all the parts aside and returned to the stock room for another lockset.

"OK, now, steady," I told myself. "You can do this." I managed to get through the first two without a hitch. As I was finishing up the third, the phone rang, and I stopped

momentarily to take the call. Returning to my work, I snapped the re-pinned cylinder into the knob and turned the key to check it, pleased with myself for completing the task fairly easily, after years away from the bench.

Then it happened: I couldn't remove the key from the lock. Try as I might, it would not come free. "What in the world?" I muttered. Then I saw the retainer ring lying in the little tray on the workbench, where I had placed it.

After I managed to correct the problem and send my customer on his way, the rest of the day was filled with non-stop phone calls and customers. However, by the time Don returned, I had everything running like a well-oiled machine. Everything, that is, except the work bench. It remained in a state of organized chaos.

"What is all this?" Don asked when the day ended. He was gesturing to the piles of various locks and parts on the bench.

"Don't ask," I replied.

Later, after everything had been properly cleared away and all the messages and work orders discussed, I said to Don, "You know how we've been talking about hiring another person? Well, I think we should look for someone with office skills."

"Why is that?"

"Today made me realize how out of touch I have gotten, with our basic shop work. I want to spend some time each week familiarizing myself more with inventory and doing a little bench work."

"That's fine with me," Don replied, "but I'm not sure how the guys will feel about it."

"Why should they object?"

"Well, you know how things go. Today, you're repinning locks, tomorrow you'll be wanting to pull service calls, the next thing you know, you'll be asking them to make the coffee. They may think that constitutes sexual harassment."



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## THE DK-25P, PART 2

*"I ended last month's article by promising that I would take you on a Securitron installation with me and show you just how user friendly the DK-25P is."*

by Jake Jakubowski

Last month I told you about the new (and improved) DK-25P touchpad from Securitron. I am a satisfied user of this equipment because I know the company stands behind their products. Also, Securitron's technical support department gave me a lot of help when I first began installing their products. I mean, even when I made a really dumb mistake, like forgetting to hook up the DC tap and then complaining that the lock wouldn't work. They willingly talked me through it.

At any rate, I ended last month's article by promising that I would take you on a Securitron installation with me and show you just how user friendly the DK-25P and other Securitron products are.

If you're installing a system for the first time, I recommend that as soon as you receive your DK-25P and Magnalock, etc. you sit down, take everything out of the boxes, familiarize yourself with each part, and then read, and re-read, the directions. Then.....

Lay everything out on a flat surface like you were installing it on the door.

You know, Magnalock here, TSB down here, CPU board up there, DK-25P touchpad over here, and exit switch on this side. Then, run the various wires and cables from each component to the CPU board. You don't want to hook them up, you simply want to familiarize yourself with the various parts and get a three dimensional feel for the system's layout that will make the wiring diagrams and installation instructions clearer to you.

Even after the number of access control units that I have installed, I still start by opening the boxes of new units to make sure that everything that is supposed to be in the boxes is in the boxes. That way, there are no nasty surprises when I get on the job. Another nice thing about Securitron's units: you get all the screws, nuts, blind compression nuts (as well as the tool to install them!), and bolts you need to hang the unit.

What you don't get (junction boxes, conduit, connectors, pull wire and the odd piece of 20 AWG wire you'll need to hook your DC tap to terminal 15 on the CPU board), you can buy for less

then \$30. Conduit and junction boxes not only conceal the wiring but makes the job look more professional. And, it helps protect the system from the curious that may want to pry, pull, pinch and probe the wires with sharp and pointed instruments to see where they go and what they're made of.

The first thing I do when starting an installation is to determine the location of my touch pad. I usually place the pad between 50" and 60" above the door sill. Then I drill a 1/2" hole completely through the door frame. (See photograph 1.) If the frame is concrete filled, and not hollow like the one in the photograph, I drill my 1/2" hole through the metal on one side, go to the other side and drill another hole. Then I chuck in a 12" long x 1/2" masonry bit and complete the hole.

The next step is mounting a junction box on the inside of the frame over the hole I just drilled. I generally secure that box with self-drilling "TEC" screws. After mounting my junction box, I pull the DK-25P cable (notice the pull wire in photograph one) and align the touch pad to drill



1. Drilling the hole in the door frame to feed wiring to the keypad.



2. The top mounting bracket of the DK-25P and the mounting screw.



3. Drilling the bottom mounting hole with the keypad in place.

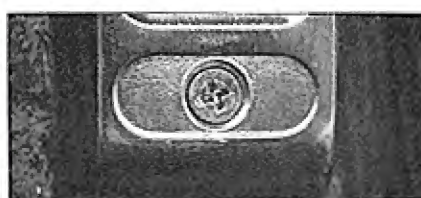


Continued from page 84

the hole I'll need for the top mounting screw. (See photograph 2.) Then, it's a simple matter to mark and drill the bottom mounting screw hole (see photograph 3), insert the screw (see photograph 4), cover it with the label and the DK-25P pad is in place (see photograph 5).

Next, I drill my holes for mounting the #62 Magnalock to the door stop on the header of the frame. (See photograph 6.) Photograph seven shows the compression nut installed on the header, and the plate that I drilled and tapped because the door stop on this particular door was not wide enough to accept the lock. Photograph eight shows a 1/2" hole drilled vertically into the frame. This hole is intersected by another 1/2" hole (not shown) drilled horizontally from the inside of the frame. These holes allow me to bring my wire from the Magnalock to the CPU Board.

Next, I install the CPU board, and any other junction boxes and conduit that I might need and fish all my wires to the junction box closest to the CPU board. I do it this way so that after I install the TSB-1 Touch Sense Bar, I can run all my wires to the CPU and



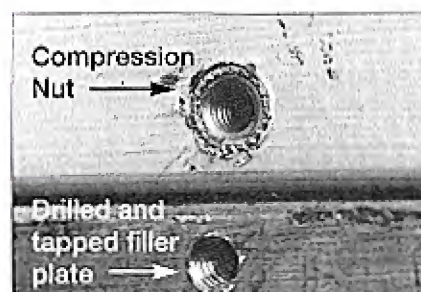
4. After drilling, insert screw.



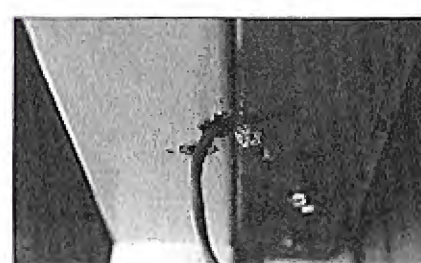
5. Once mounted, cover the mounting screw with the Securiton label.



6. The Magnalock mounted to the door header.



7. A compression nut and a filler plate were needed to attach the Magnalock.



8. The holes necessary for feeding the wire from the Magnalock to the CPU board.

do all of my connections at one time.

The last large piece of hardware that I mount is the TSB-1. The TSB-1 looks like a panic bar, but without the strike and latch. However, with the TSB-1 there are no moving parts and the only thing that is required to activate the bar is to touch it. By touching the bar anywhere along its surface, a sensor recognizes the contact and deactivates the lock, thus unlocking the door.

By turning a potentiometer, the TSB-1 can be adjusted sensitive enough to detect contact through clothing or gloves. (See photograph 9.) Which means that if someone were trying to exit with their arms full of whatever, all they would have to do is touch the bar with their hip or elbow and the door would release. This simple operation allows the TSB-1 to conform with the NFPA's 101 egress requirement of "no special knowledge" to operate the lock.

Photograph ten shows me using a Portalalign tool on my drill to drill a hole straight and level, completely through a wood door on which I mounted a TSB-1. I also use the Portalalign to make sure holes that I drill through metal doors are in alignment. The Portalalign sells for around \$30 at hardware stores and home centers. It is not a must have tool, but it sure is handy. It's like having a portable drill press with you on the job.

Photograph 11 shows the TSB-1 completely mounted on the door with the end caps in place. At the far end, you can see the armored loop that carries the TSB cable to the door frame.

O.K.! All the hardware except the transformer is in place and we're ready to "wire 'er up." That's really the easy part. Securiton gives you wiring diagrams that I would almost call "foolproof." The only reason I don't is because in the beginning (remember the DC tap wire?) I had to call their technical support department (1-800-MAG-LOCK) to get myself out of a fix.

At any rate, the first thing you wire up is the DK-25P touchpad. It's simple (see photograph 12): Black wire to terminal 26, Blue wire to terminal 25, etc. Then you bring your TSB-1 cable up and wire it in according to

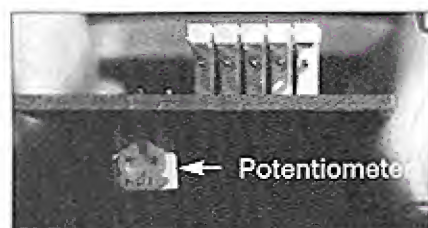


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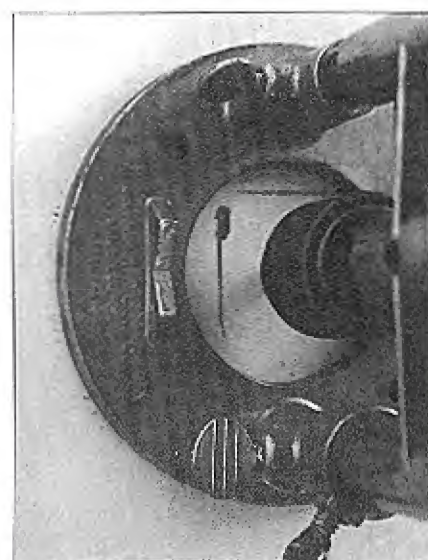
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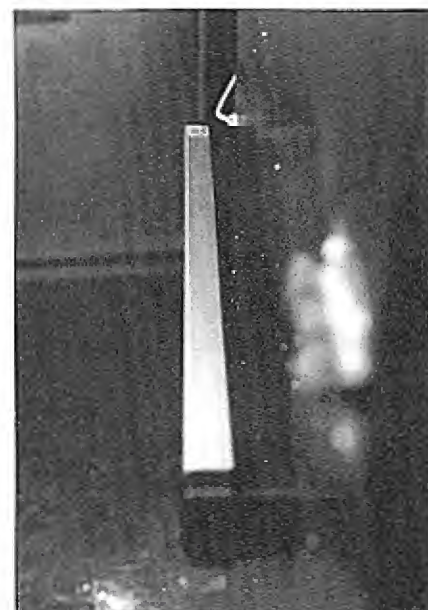
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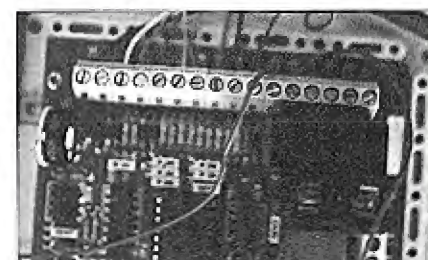
9. This potentiometer is used to adjust the sensitivity of the TSB-1.



10. The Portalign tool is like turning your drill into a portable drill press.



11. The mounted TSB-1.



12. Wiring the CPU board.

directions. Wire the DC tap (you don't need a MOV, or rectifier, when you use a Securitron #62 Magnalock in your system). Finally, put a lead on the plug-in transformer and connect the other end to the input side of the CPU.

Plug in the transformer to power up the system, and follow the instructions to set your master code and your secondary code. All entry code changes (after you have cleared the memory of any factory codes) can be made at the keypad. Check out your connections and make sure that the unit is functioning properly and snap the cover on the CPU board.

Photograph 13 and 14 show a completed installation from the inside of the door. Notice that all the wiring (since this was a concrete filled frame) is run through conduit, with junction boxes placed as necessary. I have, on occasion, had to encase the CPU board in a locking cabinet to keep people from removing the cover and foolin' with the wires.

How long does it take to install one of these systems? Well, that depends. Generally, it takes me about four to five hours to do one. Of course, I'm getting to the point where I don't rush like I used to. Also, installation time is going to depend on how many people are using the door. ("Excuse me, but can I get by real quick?" or, "What're ya' doin', puttin' on a new lock?") And, finally, installation time will be influenced by other factors like concrete filled jambs.

I have had installations that have taken me up to seven hours to complete, but those were exceptions and not the rule. I believe that if you were to figure five hours as an average installation time, you will come out pretty good as far as covering your labor costs is concerned.

So, is it worth installing access control systems? Well, figure it out for yourself. This DK-25P, Magnalock and TSB-1 installation took me about five hours to complete. To that labor cost, I had to add three hours round-trip traveling time (Twice. Once to survey and bid the job and the second time to do it). A total of 11 man hours, for which I charged my normal hourly rate, plus mileage (If you find estimating jobs troublesome, you should get The National Locksmith's

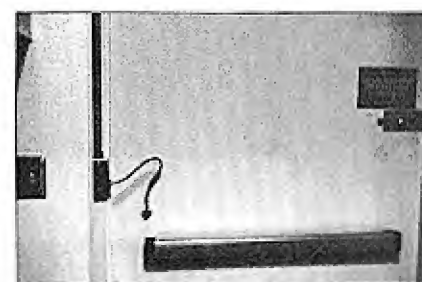
Flat Rate Manual).

Next the DK-25P (with the CPU board) cost me \$168. The 62-24VDC Magnalock came in at \$216, the TSB-1 was \$204, and the transformer (24VDC) was \$15.00. Add to those costs freight, drill bits, odds and ends of material (let's say an even \$100, although it shouldn't be that high) and you come up with a total landed cost for materials of \$703.

Now, let's assume that you mark your material up 50 percent (that would be \$703 x 1.50, which equals \$1,054.50). You charge your customer \$1,054.50 for the materials, and \$275.00 for your labor (11 man hours x \$25.00), which gives you a total ticket of \$1,329.00! Subtracting your direct costs for the merchandise, you are left with a gross profit of \$626.50, plus mileage if it applies! I ask you: "Is it worth it?"



13. The upper part of the door shows the control box with the CPU, the transformer and Magnalock.



14. The lower part shows the connection to the TSB-1 Touch Sense Bar.

Installing access control is an excellent way to gather shekels. Installing access control may not fit in with your concept of locksmithing. That's O.K. too. But, let me ask you one question: Assuming the figures I used above are valid, tell me ... when was the last time you made \$626.50 profit in eleven hours?

For more information contact a Securitron distributor or call Securitron at 800-624-5625.





# BITS & PIECES

## Informative Tidbits for the Security Industry

A recent article on the Door Aid power door assist/opener (*The National Locksmith*, May 1994, page 58) neglected to list the address and telephone number. Door Aid can be reached at 5148 Lovers Lane, Kalamazoo, MI 49002; or phone 800-527-5672.



by  
Tom Seroogy

The racks on the GM square columns are apparently prone to breaking. A number of calls have come in from various parts of the country reporting that ignition problems thought to be caused by a popped ignition tumbler cover are turning out to be broken racks.

Because the symptoms for both a bad ignition cylinder and a broken rack are similar, the real problem is often not known until the column has been dismantled.

If you are not familiar with lower column repair, refer the job back to a dealer. If you do lower column service, following are the part numbers and pricing on the rack repair kits for some of the square columns.

Berreta/Corsica — Standard column:  
Manual Shift #26012697, \$19.56  
Automatic #260112553, \$19.56  
Tilt column: Manual or Automatic  
#26012697, \$19.56  
88-93 Cutlass Supreme/Lumina —  
Standard and Tilt column: #26030896,  
\$15.55.

Right after covering the "The Master Lock Door Knob" (*The*

*National Locksmith*, May 1994), Master Lock informs us that they now have a fire rated version of their door knob series. The new unit includes a metal housing inside the chassis and a fire rated latch. (See photograph 1.)



The new Master Lock fire rated knobset.

Locksmiths needing a fire rated knob can contact a Master Lock distributor.

Briggs & Stratton is introducing a couple of new products. The first is an adapter allowing VATS Interrogator owners to read the new double sided VATS key. One end of the adapter inserts into the existing Interrogator reader. The other end accepts the new style key.

Briggs is also introducing a new collar guard to fit the standard Saginaw column. The collar fits discreetly around the existing column and resists attack on the sector gear and rack area of the column.

In cases where the column has already been damaged, the collar may serve as a repair for the upper bowl section. These units can be painted to match the color of the car.

Auto Security is now offering replacement ignition switches and cables. Various ignition switches/cables for Honda, Hyundai, Mazda, Mitsubishi, Nissan, Subaru and Ford (Asian models) can be

purchased from Auto Security Products distributors.

The Security Professionals Council (SPC) has just announced the beginning of a new consumer awareness campaign designed to elevate the public's awareness of the locksmith as a security professional.

The SPC marketing program features a Free Security Check-Up for homes and businesses by local locksmiths. The Check-Up serves as a tool for the locksmith by providing a service to residents and business owners that nobody else can provide.

The program also includes both national and local publicity by celebrity spokespersons, including J.J. Bittenbinder, a well known crime prevention speaker and editorial adviser for *The National Locksmith's* CRIME PREVENTION magazine.

All-Lock has just completed its new 1994 Automotive Lock and Key Guide (catalog AL4-94). Serving as an excellent reference manual, this catalog lists all of the the current All-Lock replacement locks and their application. A key guide is also provided. See an All-Lock distributor for your copy.

All-Lock is also offering a \$1-per-lock rebate on the purchase of their import car locks. The locks must be ordered in groups of five with a five lock minimum. To take advantage of this program, send a copy of your distributor invoice showing the part number and quantity to Anita Owens, All-Lock Co., Inc., 900 Ravenwood Dr., Selma, AL 36701. This rebate is good from March 15, 1994 to September 30, 1994.





## CORBIN CL3600 LEVER

*"The CL3600 Series is a full featured Grade 1 cylindrical lever lockset designed to bring a building into compliance with the ADA."*

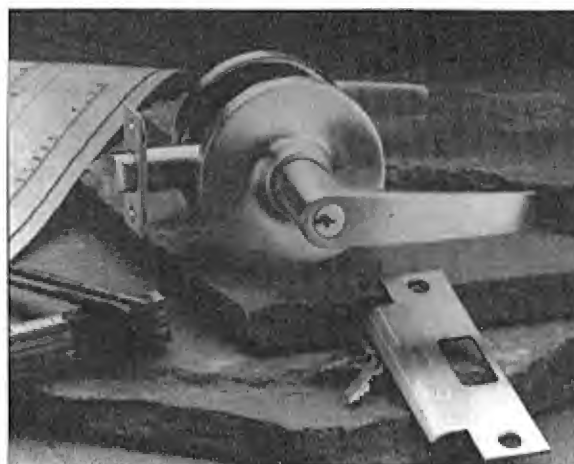
by Paul Dauphin

The adoption of "The Americans with Disabilities Act" in 1992 has probably forever changed the type of cylindrical locksets you sell; and has also created some of the greatest after market opportunities of a generation.

To meet the demand of the growing lever lockset after market segment, Corbin Russwin introduced the CL3600 Series Heavy Duty Lever Lockset at the ALOA Convention in July 1993. (See photograph 1.) The CL3600 Series is a full featured ANSI/BHMA Grade 1 cylindrical lever lockset designed to meet the needs of the building owner who is bringing his building into compliance with the ADA, wants to keep the cost to a reasonable level, yet still desires Grade 1 performance. To meet the economic needs of this type of building owner, the CL3600 Series is priced between a standard duty Grade 2 lever lockset and the more expensive Grade 1 lever locksets that were already on the market. (See illustration 2.)

The CL3600 Series Heavy Duty Lever Lockset features include:

- Non-handed design
- 1-3/8" to 2" door thickness range
- 2-3/8", 2-3/4", 3-3/4" and 5" backset availability
- ANSI, box strike, and rabbeted front and strike availability.
- Fifteen functions
- Seven finishes: 605, 606, 611, 612, 613, 625, 626
- Cylinder and keying options include:
  - 7-pin conventional
  - Interchangeable core
  - 6-pin IC
  - 7-pin IC
  - Emhart high security
  - Emhart high security IC



1. The Corbin Russwin CL3600 lever.

The cylinder and key system options available for the CL3600 Series Heavy Duty Lever Lockset are identical to those available for the Corbin Russwin CL3400 Series Extra Heavy Duty Lever Lockset. As a matter of fact, the CL3600 and the CL3400 Series utilize the same cylinder, model number 2000-034.

In addition, the CL3600 Series is also available to accept other

manufacturers' cylinders including:

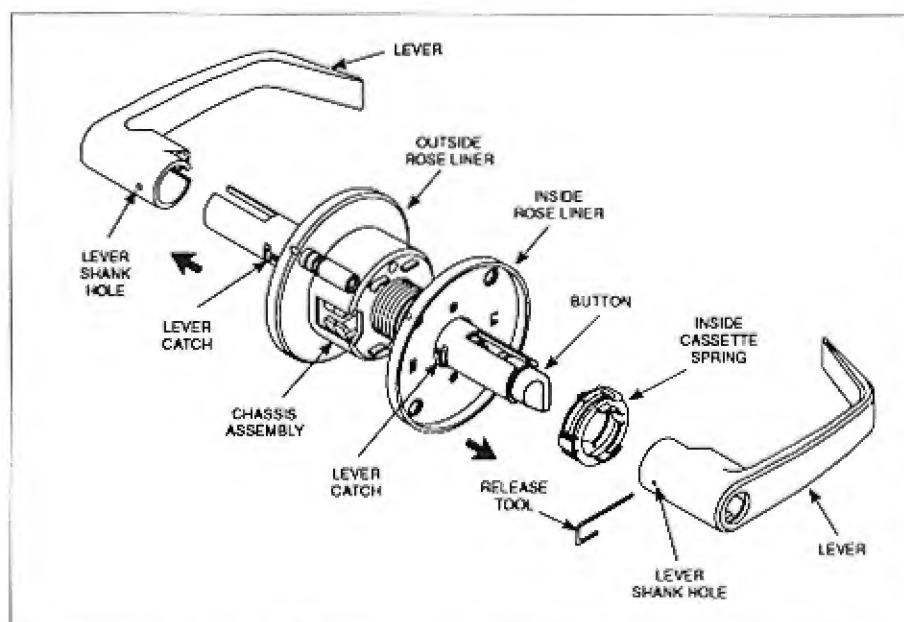
- Best type interchangeable cores
- ASSA
- Kaba
- Medeco
- Sargent
- Schlage

The CL3600 Series, which is through bolted to prevent the cylindrical chassis from rotating and to insure proper alignment, can be installed in an existing 2-1/8" cross bore by drilling two additional 7/16" through bolt holes.

(See illustration 3.)

Lever booster spring cassettes, which have been designed to reduce the chance of lever sag, are non-handed and can be replaced, if the need should arise, without disassembling the chassis.

Door thickness indicator marks located on the outside rose liner



2. Exploded view of the CL3600



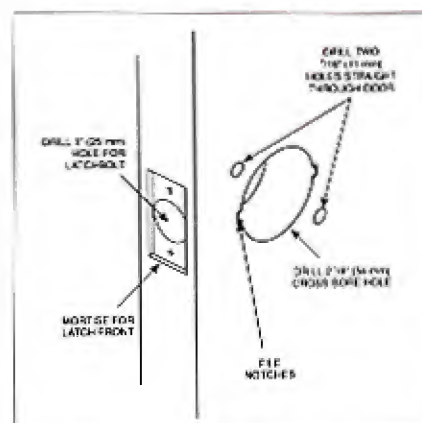
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through bolt lugs, allow you to set the lockset for either a 1-3/8", 1-3/4" or 2" thick door.

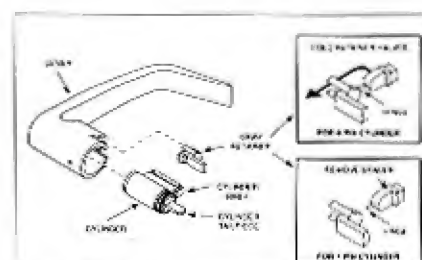
The CL3600 Series is available in 2-3/8", 2-3/4", 3-3/4", and 5" backsets. The latchbolt diameter is 7/8" but can accommodate doors with 1" edge bores. This is accomplished by using the latch sleeve which is provided standard. Latch fronts are available in 1" and 1-1/8" width and with radius corners.

A six or seven pin cylinder can be

easily installed in any of the CL3600 Series keyed functions. A plastic retainer is provided to hold the cylinder firmly in place. For six pin cylinders fold the cylinder retainer at the hinge and press fit the retainer halves together. Then align the retainer in the lever shank with the prongs facing toward the cylinder. Press the cylinder retainer firmly into the lever shank to secure the cylinder. The process is the same for seven pin cylinders except you remove and discard the hinged spacer from the cylinder retainer. (See illustration 4.)



3. Adding two 7/16" through bolt holes to a standard cylindrical door prep is all that is needed to hang this lever.



4. The CL3600 accommodates both a 6 and 7 pin cylinder.

To attach a keyed lever to the lockset, insert the key into the cylinder, align the lever shank hole with the lever catch, rotate the key clockwise 45 degrees, retracting the latchbolt, and slide the lever over the lever catch.

To remove a keyed lever for rekeying, insert the key into the cylinder, rotate the key 45 degrees, depress the lever catch, then pull the lever off.

To remove an interchangeable core lever, remove the core and tailpiece. Then, using a flat blade screwdriver, pull back on the lever catch and remove the lever.

The mid-priced, Grade 1 CL3600 Series Heavy Duty Lever Lockset is another tool available to service the lucrative and growing market segment of facility managers bringing their properties into compliance with the Americans with Disabilities Act.

*Additional information about the Corbin Russwin CL3600 Series is available through authorized Corbin Russwin distributors nationwide.*

*The author is Marketing Manager for Corbin Russwin.*



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# THRU THE KEYHOLE

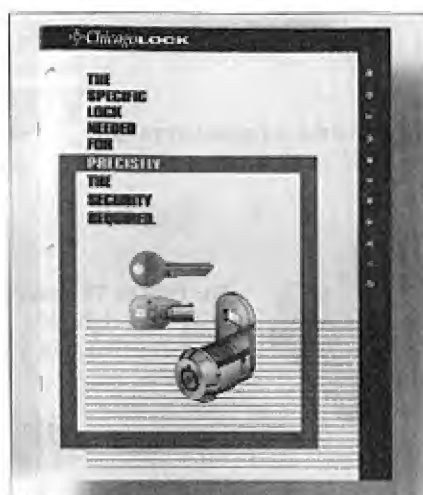


*A Peek at  
Movers & Shakers  
in the Industry*

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## **Chicago Lock Company Offers Security for the '90's**

Chicago Lock Company (CLC), a  
leading manufacturer of security  
locks, was founded in 1920 by the  
father and grandfather of the current  
president and owner, Lyle B. Shinn.  
CLC is the developer of the original  
tubular lock, the ACE II brand lock  
with a patented assembly process and  
proven reliability for pick resistance.



The new Chicago Lock Company  
catalog, available through distributors,  
introduces new locks and a new  
marketing program.

At present, the company consists of  
three entities: CLC and a subsidiary,  
TuBAR Security Products, Inc. which  
fulfills the high security requirements  
of the vending and gaming industries.  
A third entity was formed in  
December, 1993 through a "strategic  
alliance" with CamLock Systems of  
Eastbourne, England. The resulting  
benefit is that Chicago Lock products  
can now be marketed in Europe and  
Asia while CamLock products can be  
distributed in the North American  
continent.

As the Marketplace has changed,  
so have the products produced by  
CLC. For example, with the rapid  
growth in bulk vending came the need  
for greater security. CLC met this

**Continued on page 104**



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tools, parts, and  
service for  
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*Continued from page 102*

need by developing a much more sophisticated lock specifically designed to provide increased security for bulk vendors. This new lock offers many theft-resistance features including a unique keyway and sequence of six tumbler operation. CLC makes restricted key numbers available plus thousands of key combinations. Also, the lock is double-pinned for smoother operation and added strength.

Another change is taking place in the locksmith industry. As more and more security products are developed, the locksmith is required to invest in and carry more and more locks and parts. Here was another problem that CLC recognized and for which they provided a solution—the ACE II Cam Type Universal Function Lock.

A kit is provided with their Universal Function Lock which contains all the parts necessary to assemble a variety of different lock configurations. This, in turn, provides the locksmith with much greater versatility, saving him both time and money because he doesn't

need to stock and carry around a lot of extra inventory.

In order to maintain quality, CLC sales and engineers are always available to work with customers in designing locking systems, tooling or other special requirements. This enables more and more manufacturers to build in CLC locks as standard equipment for their products.

Another CLC advantage is that their locks can be retro fit into almost all existing vending equipment.

In order to simplify the customers' purchasing, CLC has developed three distinct catalogs: a Vending Catalog, a Distributor Catalog and a soon to be completed General Purpose Catalog.

Locksmiths interested in the ACE II Cam Type Universal Function Lock and Chicago Locks' new program and catalog should call their distributor. To contact Chicago Lock directly, call 312-282-7177, or write to the Chicago Lock Company, 4311 W. Belmont Avenue, Chicago, IL 60641.

## **Perma-Vault**

"Asset Protection" is the prime purpose of the locksmith business; offering solutions to fit your customers needs for protection of cash and other valuables.

Certainly your displaying and selling safes not only protect your clients needs, but can be a very important part of your profitability.

Realizing the problem of space limitation in your crowded shop and the cost of displaying safes, the Perma-Vault Safe Corporation has designed a complete line of affordable safes that take up very little room on your display floor or counter.

Working with selected samples and utilizing the "back-up" inventory of your stocking Perma-Vault Locksmith Distributor, will result in good stock turn-over with a minimum inventory, resulting in a good profit return.

Perma-Vault models are light enough to be carried into a home, business or institutional facility from your service vehicle. The sales potential is limited only by the effort

*Continued on page 107*

# Major

## MANUFACTURING, INC.

**Every Installation  
Is a Self-Portrait  
Of the Person Who Did It.  
Autograph Your Work with Excellence.**

[Click here for more information](#)



**Continued from page 104**

and imagination of the locksmith who is interested in adding profit to his bottom line.

Perma-Vault also has the ability to custom build any safe, large or small, that your clients may need.

Locksmiths have found Perma-Vault to be a well built, quality product which provides affordable protection for your customer.

For more information contact: Perma-Vault Safe Corporation, P.O. Box 473, Huntingdon Valley, PA 19006-0473. Or call 215-364-0330.

who resell their product line. The products Salsbury offers are institutional quality and are found in mailrooms, apartments, businesses, government agencies, private postal centers, universities and homes.

Salsbury has a trained and knowledgeable staff to assist dealers. From selecting the proper equipment to space saving ideas, they will guide one every step of the way. Experienced professionals will answer all questions regarding products and general ordering information. Furthermore, its engineering staff can be called upon to custom design and

layout a mailroom to fit needs for new and for the future.

For over 50 years, Salsbury has put its reputation on the line. That reputation has been built by providing well designed products which can provide a mailroom with the efficiency, security and years of trouble free service it requires.

For more information on reselling mailboxes contact Salsbury Industries, 1010 E. 62nd St., Los Angeles, CA 90001. Or call 800-323-3003, 213-232-6181, or fax 213-232-7021.



**Salsbury Mailboxes**

Since 1936, Salsbury Industries has been the industry leader in mailboxes and mailroom equipment. They have a full line of products including brass and aluminum mailboxes, mail carts, mail bags, stamp machines, collection boxes, mail drops and sorters. Systems can also be customized for specific mail delivery requirements.



Salsbury Industries' mail boxes.

The number one customer of Salsbury Industries has been the United States Post Office. Throughout the years, Salsbury has been awarded numerous postal contracts based on its ability to manufacture the highest quality products at the best possible price. In fact, you have probably seen Salsbury's traditional brass or modern aluminum P.O. boxes in your local branch post office.

Salsbury also currently works in cooperation with many locksmiths

**medeco®**  
HIGH SECURITY LOCKS

*Integrity.  
Ingenuity....  
security solutions.*

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# BUSINESS BRIEFS

## News from the Locksmithing Industry

### INDUSTRY INTERVIEW...

In 1971 George Egan, a service technician for a major bank equipment manufacturer with extensive experience servicing safes, safe deposits boxes, vault doors and related equipment, decided to start his own business.

From one truck and working out of the breezeway of his house to four locations and 20 employees certainly translates into a version of the "American Dream." This is the story of Bonafide Safe & Lock, Inc. of Milwaukee, Wisconsin.

In 1963 George began gaining his experience doing bank equipment service and lock work for Mosler Safe company. When he started Bonafide he used this background in safe service as the cornerstone of his business.

Within a year George hired his first employee, Sheldon Wolf, who is still with Bonafide.

Within seven years (1978) George bought Badger Lock & Key on the east side of Milwaukee giving the company a strong presence in that part of the city. Later that same year Egan built and moved into a strip mall a short distance from his house. This move, Egan says, enhanced the company's image and led the way to the next major expansion.

In 1983 Bonafide moved into a 13,000 square foot building serving as the corporate headquarters, warehouse and distribution center for 20 employees and four different locations.

Getting to this point required some smart marketing moves on Egan's part. Bonafide inventories for



1. From the breezeway to four locations, Bonafide is on the move.



2. Bonafide meets the Milwaukee area's demand for safes and prefab security vaults.

distribution major lines of hardware. What Bonafide did however is specialize in the electronic end of the business with lines such as Folger-Adam and Locknetics.

"Selecting the correct matching hardware is vital," Egan says, "it's not unusual to see locking systems specified by architects as completely unworkable."

"Before any electric strike, magnet or deadbolt is shipped we want our customer to know that the system performs as expected."

Another important marketing move was developing the sale potential of safes. A full time salesman was hired in 1978 to develop this market. Currently Bonafide's principal lines include AMSEC, Meilink, A&B and Treadloc. Bonafide services all lines including the electronic retail safes such as Tidel, Allied Gary and NKL.

"This is a changing business as well," says Egan, "15 to 20 years ago most safes were steel, now with the introduction of the composites, electronic combination locks, electronic time locks and electronic time delay locks sales and service has become much more technical."

"Twenty years ago we sold safes, now we are into installing 40' X 30' prefabricated security vaults." He added.

Egan also sees the new ADA regulations causing major changes. "The locksmith has to keep up with these changes and learn to adapt and market correctly." He said.

"The locksmith must be knowledgeable in all the different types of products so he can sell the correct product. He must see a customer's need and sell the product that best serves that need." said Egan.

What kind of improvements do locksmiths need to make?

"Locksmiths need to improve the public's image of who they are," says Egan. "The public has no idea what the locksmith is capable of doing. As far as the public is concerned, a handyman down the street can do what a locksmith does."

"The locksmith is not recognized the way he should be," Egan said. "Although we are moving in the right direction."

Egan sees the future locksmith balancing both mechanics and electronics.

"There will always be a lot of keys," he said, "but as we move towards the future, more and more things will be controlled by cards, more things will become electronic."

"The locksmith needs to interface the electronics and the mechanical part of security."





Continued from page 108

## INDUSTRY NEWS...

**HPC, Inc.** announces the opening of their warehouse in Mexico City. HPC del Sur (HPC of the South) was established so that it would be easier for their Mexican distributors to purchase products from HPC. Although NAFTA brings down the costs of the importing process for Mexican distributors, the procedures for the process are much more complex. HPC has 14 Mexican distributors and anticipates that number growing higher this year.

**Monaco Lock Company, Inc.** now accepts Master Card and Visa for your convenience. Customers who wish to charge their purchases may do so and consequently save on COD charges incurred by UPS. The company is very happy to provide this service because so many customers have asked for it in the past. Please feel free to ask your customer service representative to keep your credit card information on file.

A new product flyer from **Von Duprin** describes and illustrates the Series 98 and 99 Pneumatic Controlled Exit Devices. This series unit was introduced recently for use in hazardous areas where electrically operated products are not permitted.



Von Duprin's new product flyer.

**Locksmith Security Association (LSA)** of Michigan announces its elected officers and board for 1994 to 1996.

President- John Hubel, CML  
Vice President- Ray Lindberg, CPL  
Treasurer- Al Moebus  
Secretary- Jacob Scott  
Sargent at Arms- Kelvin Heath  
Board of Directors  
Chairman, Larry Williams, CRL, CPP  
Dwayne Crenshaw, CML  
Sal Dulcamaro, CML  
Duane Michelsen, CML  
Thomas Peloso, CML  
Raymond Sinai, CPL

In September 1994, **Red Deer College** will offer the first term of a four year locksmithing training program. **Cyril Hermery** joined the college staff in November 1993 to begin developing the necessary courses and course material.



Cyril Hermery

The objective of the locksmith apprenticeship training is to develop a competent Journeyman Locksmith over a four year period.

Cyril holds a Locksmith Journeyman Certificate and has 18 years of industry experience where he has owned and managed locksmithing businesses in Red Deer and Edmonton.

**NT Quality Hardware, a Newman Tonks company**, has moved its administrative offices and part of its warehouse operation to a new location. E.F. Johnson, president of NT Quality, says the move will help the company become even more efficient in meeting the needs of its nationwide customer base.

The new address and phone numbers for the administrative offices are:

NT Quality Hardware  
7345 Orangewood Avenue  
Garden Grove, CA 92641  
Tel: 800-345-8819 (continental U.S.)  
Fax: 800-345-8820  
International Fax: 714-373-1986

**Irving Saphirstein** has been Appointed Vice President of **DELTA Controls**, a member of the **LORI Group**. Saphirstein is recognized as the father of electromagnetic locking and originator of many of its applications and installation support products. In his new position, he will oversee sales, marketing and product development for DELTA Controls' complete line of door control equipment and systems components.

**DoorKing** has announced the promotion of **Joyce M. Haynes** to the companies Sales Department as a Wholesale Consultant.



Joyce M. Haynes, Wholesale Consultant for DoorKing.

Ms. Haynes responsibilities will include working with the companies dealers to promote it's products and services, and assist them with design and application of access control systems.

Also, **Ed Curry** has been appointed as the company's Eastern Region Sales Manager of DoorKing.



Ed Curry, DoorKing's new Eastern Region Sales Manager.

Mr. Curry will be working out of the companies East Coast sales office in

Moorestown, New Jersey and can be reached at 609-273-9206. Ed will be responsible for all sales activities on the North East coast, including the states of NY, PA, NJ, DE, MD, WV, VA, and the Washington, DC area.

**Bill Bartling, General Manager** recently announced that **F Systems, Inc.** has been re-identified under the name **Designed Security Inc.**

Recently purchased as a wholly-owned subsidiary of Detex Corporation, Designed Security Inc. will focus on further penetration of existing security peripheral equipment markets.



Thomas Kearns

The appointment of **Thomas Kearns** to an executive position within their technical sales department has been announced by

**Security Lock Distributors**. Mr. Kearns has worked as a technical specialist in the field of security hardware and access control for over 12 years and is particularly experienced in the installation of such products.



# KEY CODES

## Motorboat & Motorcycle



### Cole-Herzog (Boat)

Series		Blank	
CH501-525		CH12248	
Number	Code	Number	Code
501	32412	514	42413
502	12413	515	41243
503	32192	516	34314
504	32314	517	34123
505	31434	518	31314
506	14314	519	43412
507	31423	520	41324
508	24314	521	24134
509	52413	522	14324
510	34124	523	14343
511	43413	524	41232
512	34132	525	21134
513	43145		

Spacing - .125-.219-.313-.407-.501

Depths  
1-.250  
2-.230  
3-.210  
4-.190

### Chrysler

Series		
CH3-8		
Number	Blank	Code
CH3	C39A	51515
CH4	C39B	51515
CH5	C39C	51515
CH6	C39D	51515
CH7	C39E	51515
CH8	C39G	51515

Spacing - .150-.240-.330-.420-.510

Depths  
1-.250  
5-.200

Continued on page 114

# NATIONAL

## AUTO LOCK SERVICE, INC.

**National Auto Lock Service, Inc. offers a wide range of equipment and services for the Automotive Locksmith. From tools and hard to find key blanks to transponder programming, we can take the mystery out of car service. We accept credit card orders, and can ship COD. Contact us for the latest in automotive technology.**

[www.laserkey.com](http://www.laserkey.com)



Continued from page 112

# Motorcycle & Motorboat

## Evinrude & Johnson - O/B Motors (1) Revised

<u>Series</u>			<u>Blank</u>
1-35			OM10
<u>Number</u>	<u>Code</u>	<u>Number</u>	<u>Code</u>
1	1213	19	1431
2	1231	20	1433 (2433)
3	1233	21	1435 (2435)
4	1234	22	1453 (2453)
5	1253	23	1455 (2455)
6	1255	24	3413
7	3213 (3212)	25	3431
8	3231	26	3433 (3425)
9	3233	27	3435 (3425)
10	3235	28	3452 (3453)
11	3253	29	3444
12	3255	30	2525
13	3211	31	4525
14	3411	32	5433
15	5233	33	5435
16	5235	34	5453
17	5253 (5253)	35	5455
18	1413 (1513)		

\*The E31 (Pollak) blank is commonly referred to as the "Pistol Key".

Spacing - .140-.235-.330-.435

Depths 1-.250  
2-.220  
3-.210  
4-.190  
5-.170

## Evinrude & Johnson O/B Motors (2) Revised

Series					Blank
51-67					1006H
Number	Code	Number	Code		
51	5151	60	1155		
52	5355	61	5331		
53	5153	62	5353		
54	1355	63	3155		
55	5511	64	3511		
56	5133	65	3531		
57	3551	66	5531		
58	5153	67	5551		
59	1353				

Spacing2 - .150-.243-.325-.418

Depths 1-.250  
3-.220  
5-.190

## HARTLEY-DAVIDSON

Soft Tail - 1934+  
Wide Glide

Series: F.L.B. Blank: \*F648

Number	Code	Number	Code
001	-----	026	23121
002	-----	027	-----
003	-----	028	-----
004	-----	029	-----
005	-----	030	-----
006	-----	031	-----
007	-----	032	-----
008	-----	033	-----
009	-----	034	-----
010	-----	035	-----
011	-----	036	-----
012	-----	037	-----
013	-----	038	-----
014	-----	039	-----
015	-----	040	-----
016	-----	041	-----
017	-----	042	13321
018	-----	043	(23321)
019	-----	044	33321
020	-----	045	-----
021	-----	046	-----
022	-----	047	-----
023	-----	048	-----
024	-----	049	-----
025	-----	050	13131

Spacing: -.090 -.190 -.290 -.390 -.490.

Depths: 1-.275 2-.245 3-.215 4- Blank Width 5-.153

\*\*\* USE DEPTH KEY SET #024 \*\*\*

\* The Key Blank must be FILED on Each Side making it LESS THICK.

(.....) These Codes are Projected and May Not be Entirely Accurate.

(Quickies)

Mercury

O/B Motor Data

Key Number	Blank	Key Number	Blank
123	40C	129	840E
*124	840E	130	40E
125	40C	131	840E
*126	840E	132	40E
127	40C	133	840E
*128	840E	134	40E

**Note:** This data is to aid the Locksmith in quickly matching the proper blank in order to duplicate the numbered Mercury key. Order through supplier.

\* Indicates that blank may have to be inverted in order to duplicate. Be sure to match the GROOVES with the original key.





Continued from page 114

# Motorcycle & Motorboat

HARLEY-DAVIDSON  
Soft Tail - 1984+  
Wide Glide

Series: F.L.H. Blank: \* P64K

Number	Code	Number	Code
051	23131	076	-----
052	-----	077	-----
053	-----	078	-----
054	-----	079	21212
055	31231	080	-----
056	-----	081	-----
057	-----	082	-----
058	-----	083	-----
059	-----	084	-----
060	-----	085	-----
061	-----	086	11317
062	-----	087	32323
063	-----	088	-----
064	-----	089	-----
065	12331	090	-----
066	-----	091	-----
067	-----	092	-----
068	-----	093	-----
069	-----	094	-----
070	-----	095	-----
071	-----	096	21122
072	-----	097	-----
073	22112	098	-----
074	-----	099	-----
075	-----	100	13122

Spacing: -.090 -.190 -.290 -.390 -.490

 Depths: 1-.275 x2 1- Blank Width  
 2-.245 2-.215  
 3-.215 3-.155

\*\*\* USE DEPTH KEY SET #024 \*\*\*

\* The Key Blank must be FILED on Each Side making it LESS THICK.

(-----) These Codes are Projected and May Not be Entirely Accurate.

HARLEY-DAVIDSON  
Soft Tail - 1984+  
Wide Glide

Series: F.L.H. Blank: \* P64K

Number	Code	Number	Code
101	-----	126	-----
102	-----	127	-----
103	-----	128	-----
104	31222 (13122)	129	-----
105	32222 (13222)	130	-----
106	32222 (13322)	131	-----
107	11322	132	(11332)
108	21322	133	21332
109	31322	134	31332
110	42322	135	(12332)
111	(22322)	136	(22332)
112	(32322)	137	32332
113	-----	138	(32332)
114	-----	139	23332
115	-----	140	(33332)
116	21132	141	-----
117	-----	142	-----
118	-----	143	-----
119	-----	144	-----
120	-----	145	-----
121	13132	146	-----
122	23132	147	-----
123	-----	148	-----
124	-----	149	-----
125	-----	150	-----

Spacing: -.090 -.190 -.290 -.390 -.490

 Depths: 1-.275 x2 1- Blank Width  
 2-.245 2-.215  
 3-.215 3-.155

\*\*\* USE DEPTH KEY SET #024 \*\*\*

\* The Key Blank must be FILED on Each Side making it LESS THICK.

(-----) These Codes are Projected and May Not be Entirely Accurate.

HARLEY-DAVIDSON  
Soft Tail - 1984+  
Wide Glide

Series: F.L.H. Blank: \* P64K

Number	Code	Number	Code
151	-----	176	31223
152	-----	177	-----
153	-----	178	-----
154	13213	179	-----
155	-----	180	-----
156	-----	181	32223
157	-----	182	11323
158	-----	183	-----
159	-----	184	-----
160	-----	185	-----
161	-----	186	-----
162	-----	187	32323
163	-----	188	-----
164	-----	189	-----
165	-----	190	-----
166	21123	191	-----
167	-----	192	(22113)
168	-----	193	(22123)
169	22123	194	22133
170	-----	195	32133
171	-----	196	(32233)
172	-----	197	(32333)
173	-----	198	-----
174	-----	199	-----
175	-----	200	-----

Spacing: -.090 -.190 -.290 -.390 -.490

 Depth: 1-.275 x2 1- Blank Width  
 2-.245 2-.215  
 3-.215 3-.155

\*\*\* USE DEPTH KEY SET #024 \*\*\*

\* The Key Blank must be FILED on Each Side making it LESS THICK.

(-----) These Codes are Projected and May Not be Entirely Accurate.

HARLEY-DAVIDSON  
Saddle Bags

Series: HE 1-100 Blank: D8777 (National)

Number	Code	Number	Code
1	-----	26	23223
2	20313	27	33224(332214)
3	33313	28	-----
4	-----	29	-----
5	21313	30	32313
6	33113	31	-----
7	-----	32	22123
8	21313	33	-----
9	-----	34	-----
10	13132	35	22134
11	-----	36	32113
12	33413	37	122313
13	-----	38	222133
14	223243	39	-----
15	221322	40	143333
16	(323143)	41	234334
17	222442	42	-----
18	-----	43	133923
19	-----	44	233124
20	-----	45	331324
21	313224	46	-----
22	-----	47	211321
23	232124	48	313242
24	412324	49	-----
25	112123 (313134)	50	233233

Spacing: -.160 -.250 -.340 -.430 -.520 -.610

 Depth: 1-.295 x2 1- Blank Width  
 2-.270 2-.245  
 3-.245 3-.155  
 4-.220 4-.145

\*\*\* USE DEPTH KEY SET #025 \*\*\*

(-----) Alternate Numbers

Continued on page 118



Continued from page 116

# Motorcycle & Motorboat

**HARLEY-DAVIDSON**  
Saddle Bags

Series: HD 1-120	Blank: 88777	Blank: 88777	
Number	Code	Number	Code
51	-----	76	122434
52	141127 (141123)	77	232223 (232223)
53	231214	78	321211
54	334434	79	124442
55	112232	80	221242
56	232333	81	212221 (412331)
57	-----	82	-----
58	-----	83	-----
59	131134 (232114)	84	311312
60	-----	85	-----
61	-----	86	121344
62	221423 (223412)	87	313434
63	-----	88	-----
64	-----	89	221244
65	-----	90	314443
66	321314	91	-----
67	121134	92	-----
68	-----	93	313334
69	-----	94	112331
70	-----	95	231131
71	232443	96	-----
72	321342	97	234222
73	123442	98	212344
74	232243	99	-----
75	323244	100	-----

Spacing: -.100 -.250 -.340 -.430 -.520 -.610

Depth: 1-.295 x2 1- Blank Width  
2-.270 2-.245  
3-.245 3-.195  
4-.220 4-.145

\*\*\* USE DEPTH KEY SET #025 \*\*\*  
(-----) Alternate Numbers

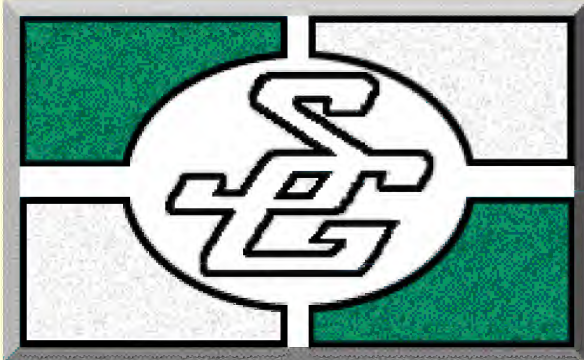
Series 25001-6000	KAWASAKI (5001-5036)		Blank X102
Number	Code	Number	Code
5001	221327	5019	332433
5002	132231	5020	342343 =242343
5003	312233	5021	112231
5004	132413	5022	233112 =331213
5005	342322	5023	343223
5006	333433 =233233	5024	123441 =123442
5007	243142 =132123	5025	312112 =321533
5008	233422	5026	331224
5009	122113	5027	123112
5010	311123	5028	-----
5011	132242 =133113	5029	343143 =113312
5012	132242	5030	123332
5013	312213	5031	311332
5014	322343	5032	132213
5015	342333	5033	-----
5016	132123	5034	323242
5017	133313 =113313	5035	331323
5018	311122	5036	231213

Spacing: -.100 -.200 -.300 -.400 -.500 -.600

Depth: 1-.250 3-.220  
2-.240 4-.200

\* Possible Alternate Code Numbers.  
\*\*\* USE DEPTH KEY SET #264 \*\*\*

Continued on page 120



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**Comptronic electronic**  
**safe locks for...security...**  
**technology...tradition.**

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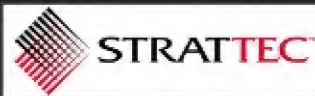


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Continued from page 118

# Motorcycle & Motorboat

Series Z5001-6000	KAWASAKI (5037-5072)	Blank X105
Number	Code	Number
5037	112123	*122123
5038	232433	-----
5039	131543	-----
5040	342113	-----
5041	312451	-----
5042	233312	*333312
5043	321333	-----
5044	134213	-----
5045	321312	*321312
5046	213222	-----
5047	131132	-----
5048	333243	-----
5049	333413	-----
5050	-----	-----
5051	124243	-----
5052	243131	-----
5053	333233	*333233
5054	123413	-----

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depths: 1-.250 x2 1- Blank Width  
 2-.240 2-.220  
 3-.220 3-.180  
 4-.200 4-.140

Series Z5001-6000	KAWASAKI (5073-5108)	Blank X103
Number	Code	Number
5073	243421	-----
5074	132433	-----
5075	333342	*333342
5076	241313	*141313
5077	212412	-----
5078	121323	-----
5079	333131	-----
5080	342432	-----
5081	231312	-----
5082	123213	-----
5083	212124	-----
5084	321231	-----
5085	343312	-----
5086	211242	-----
5087	131133	*113133
5088	223421	-----
5089	121334	-----
5090	223513	-----

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depths: 1-.250 3-.220  
 2-.240 4-.200

\* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*

Series Z5001-6000	KAWASAKI (5109-5144)	Blank X103
Number	Code	Number
5109	332112	-----
5110	332422	-----
5111	222332	-----
5112	133243	-----
5113	242112	*242112
5114	311243	-----
5115	113412	-----
5116	321321	-----
5117	232232	-----
5118	313431	-----
5119	131313	-----
5120	341123	-----
5121	233343	-----
5122	311212	-----
5123	123422	-----
5124	312432	-----
5125	241241	-----
5126	113133	-----

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depths: 1-.250 x2 1- Blank Width  
 2-.240 2-.220  
 3-.220 3-.180  
 4-.200 4-.140

Series Z5001-6000	KAWASAKI (5145-5180)	Blank X103
Number	Code	Number
5145	311331	-----
5146	232212	-----
5147	224442	*212423
5148	441133	*331132
5149	133431	-----
5150	211312	-----
5151	122221	-----
5152	343141	-----
5153	343244	-----
5154	112431	-----
5155	331331	-----
5156	243223	-----
5157	242431	*212423
5158	132221	-----
5159	322113	-----
5160	222321	-----
5161	131232	*121232
5162	342234	-----

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depths: 1-.250 3-.220  
 2-.240 4-.200

\* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*



## Motorcycle & Motorboat

Series 25001-6000		KAWASAKI (5181-5216)		Blank X103		Series 25001-6000		KAWASAKI (5217-5252)		Blank X103	
Number	Code	Number	Code	Number	Code	Number	Code	Number	Code	Number	Code
5181	231112	5195	331112	*341112		5217	243412	5235	124432		
5182	341223	*341222		5200	313432	5218	113342	5236	123132	*331344	
5183	122441			5201	122232	5219	111322	5237	244211		
5184	543334			5202		5220	343422	5238	123512		
5185	234221			5203	144232	5221	223324	5239	331101		
5186	122113			5204	133423	5222	134231	5240	343431		
5187	212422			5205	313312	*323312		5241	234324		
5188	124331			5206	211224			5242	121211		
5189	342441	*242441		5207	121134			5243	213121		
5190	213332			5208	232441			5244	324234		
5191	134211			5209	334413			5245	341312		
5192	244121			5210	241321	*242321		5246	212243	*342421	
5193	321244			5211	121244			5247	222424		
5194	333324			5212	243133			5248	131331		
5195	222211			5213	331221			5249	333421		
5196	113122			5214	124412			5250	221311		
5197	224433	*224432		5215	313324			5251	224132		
5198	133344			5216	221232			5252	332244		

Specing:	- .100	- .200	- .300	- .400	- .500	- .600
Depth:	1-.260	2-.240	3-.220	4-.200		
			x2	1- Blank Width		
				2-.230		
				3-.180		
				4-.140		

Specing:	- .100	- .200	- .300	- .400	- .500	- .600
Depth:	1-.260	2-.240	3-.220	4-.200		

\* possible Alternate Code Numbers.  
\*\*\* END DEPTH KEY SET #204 \*\*\*

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# Motorcycle & Motorboat

Series Z5000-6000	KAWASAKI (5253-5268)		Blank X103	
Number	Code	Number	Code	
5253	323332 *332244	5271	121312	-----
5254	211213	5272	231341	-----
5255	121123	5273	313212	-----
5256	234434	5274	123424	-----
5257	313131	5275	332334	-----
5258	324412	5276	243243	-----
5259	211321	5277	333441	-----
5260	124234	5278	242312	-----
5261	344212	5279	113241	-----
5262	311313	5280	323224 *434224	-----
5263	232223	5281	133434	-----
5264	313421	5282	342342	-----
5265	224334 *244334	5283	212234	-----
5266	122243	5284	133111	-----
5267	313241	5285	111342	-----
5268	112413	5286	123343	-----
5269	322314 *322324	5287	341134	-----
5270	234234	5288	211343	-----

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depths: 1-.260 x2 1- Blank Width  
 2-.240 2-.220  
 3-.220 3-.180  
 4-.200 4-.140

Series Z5001-6000	KAWASAKI (5289-5324)		Blank X103
Number	Code	Number	Code
5289	221124	5307	132413
5290	322131	5308	343323
5291	312321	5309	243432 *224242
5292	233211	5310	232421
5293	332123	5311	323414
5294	213312	5312	231332
5295	233134	5313	213132
5296	233124	5314	334213
5297	342241	5315	323343
5298	332312	5316	242231
5299	241221 *233134	5317	232232
5300	243432	5318	223412
5301	132323 *122324	5319	324131
5302	324113	5320	334431
5303	233223	5321	242341
5304	134233	5322	241113
5305	311232 *311222	5323	342223
5306	252322	5324	343331 *342231 *343223

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depths: 1-.250 3-.220  
 2-.240 4-.200

\* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*

Series Z5001-6000	KAWASAKI (5325-5360)		Blank X103
Number	Code	Number	Code
5325	234344	5343	332222
5326	122333	5344	313322
5327	212333	5345	344333 *223234
5328	153212	5346	342421
5329	344321 *334321	5347	222342
5330	334321	5348	234124
5331	223212	5349	322212
5332	222431	5350	322333
5333	122344	5351	233244 *122133
5334	321233	5352	324122
5335	343231	5353	242114 *314441
5336	324311 *324211	5354	*324441 241333
5337	212223 *142313	5355	132222
5338	*212231 124131	5356	222112
5339	312134	5357	311221
5340	241322	5358	123433
5341	122241	5359	332341
5342	241122	5360	242213

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depths: 1-.260 x2 1- Blank Width  
 2-.240 2-.220  
 3-.220 3-.180  
 4-.200 4-.140

Series Z5001-6000	KAWASAKI (5361-5396)		Blank X103	
Number	Code	Number	Code	
5361	112132	5379	122123	
5362	322432	5380	232434	
5363	123324 *333434	5381	311123 *311124	
5364	322232 *332232	5382	312413 *212324	
5365	133313	5383	212324	
5366	324311 *223133	5384	123231	
5367	132132	5385	242212	
5368	132432 *133421	5386	312312	
5369	241243	5387	233253	
5370	343134	5388	132132	
5371	131241	5389	112334	
5372	332424	5390	333223	
5373	224312 *234133	5391	221333	
5374	112324	5392	331234	
5375	221131	5393	234133 *234132	
5376	334244	5394	241242	
5377	311342 *311344	5395	224323	
5378	*313343 213211	5396	133124	

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depths: 1-.260 3-.220  
 2-.240 4-.200  
 \* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*

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## Motorcycle & Motorboat

Series 25001-6000	KAWASAKI (5397-5432)		Blank X103
Number	Code	Number	Code
5397	323233	5415	134244
5398		5416	030122
5399	133111	5417	244304
5400	121233	5418	132424
5401	334132	5419	322221
5402	232223 *134223	5420	231132 *241132
5403	*133223 *132223	5421	312332
5404	243333	5422	244433
5405	311214	5423	132422
5406	223432	5424	124322
5407	132334	5425	234344
5408	333241 *334314	5426	324241
5409	244323	5427	343122 *343123
5410	244114 *324433	5428	*343112 124223
5411	122133	5429	212342
5412	222244	5430	324423
5413	323323	5431	241133
5414	222411	5432	312242

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 x2 1- Blank Width  
 2-.240 2-.220  
 3-.220 3-.180  
 4-.200 4-.140

Series 25001-6000	KAWASAKI (5433-5468)		Blank X103	
Number	Code	Number	Code	
5433	234333	5451	124122	-----
5434	214133 *132442	5452	334341 *224342	-----
5435	224344	5453	243124	-----
5436	223122	5454	334224	-----
5437	324223 *234233	5455	323324	-----
5438	*334223 134332	5456	332242 *323324	-----
5439	212133	5457	231231	-----
5440	313234	5458	321231 *321121	-----
5441	124342	5459	122212	-----
5442	324432	5460	243342	-----
5443	231121	5461	333423	-----
5444	344143 *344142	5462	134154	-----
5445	121222	5463	232241	-----
5446	113214 *223331	5464	341343	-----
5447	134343	5465	222442	-----
5448	132231	5466	323123	-----
5449	322133	5467	241224	-----
5450	334343	5468	134323 *113432	-----

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 3-.220  
 2-.240 4-.200  
 \* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*



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## Motorcycle & Motorboat

Series 2400-6000	KAWASAKI (5465-5504)		Blank 1103
Number	Code	Number	Code
5469	244331	5487	253247
5470	244742	5488	313542
5471	133152 *131131	5489	221212
5472	223333	5490	124313
5473	313133	5491	232133 *341121
5474	231233	5492	213233
5475	323431 *132312	5493	242323
5476	233231	5494	121121 *312343
5477	331342	5495	221313 *351323
5478	313221	5496	312343
5479	241342	5497	123431
5480	333241 *223241	5498	231231 *331231
5481	234131	5499	331323
5482	331223	5500	234223
5483	322441	5501	342333
5484	132231	5502	242332
5485	333134 *332231	5503	234322
5486	134431	5504	133241

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 x2 1- Blank Width  
 2-.240 2-.250  
 3-.220 3-.180  
 4-.200 4-.140

Series 23501-5000	KAWASAKI (5505-5540)		Blank 1103
Number	Code	Number	Code
5505	241131	5525	132422
5506	122342	5526	221324 *331213
5507	122111	5527	*313213
5508	333234	5528	242242
5509	311333	5529	341323
5510	222433	5530	322443 *322423
5511	123233 *213433	5531	243212 *743214
5512	221133	5532	231323 *131221
5513	313243	5533	211341
5514	221343	5534	131243
5515	132134	5535	
5516		5536	232127
5517	332132 *322132	5537	321233
5518	243252	5538	222333
5519	232344	5539	123132 *231321
5520	234221 *124211	5540	224413
5521	213123 *213121		234241
5522	244222		312222
		5540	331324

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 3-.220  
 2-.240 4-.200  
 \* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*



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# Motorcycle & Motorboat

Series Z5001-6000	KAWASAKI (5541-5576)		Blank X103	
Number	Code	Number	Code	
5541	-----	5559	342321	-----
5542	212322	5560	241232	-----
5543	322212 *232242	5561	133324	-----
*232212	*123323			
5544	322311	5562	213343	*213342
5545	344533	5563	123213	*233213
	-----		*133213	-----
5546	241331	5564	322323	-----
	-----			
5547	241331	5565	244434	*243423
	-----			
5548	241223	5566	124242	*134242
	-----			
5549	333124	5567	322131	-----
	-----			
5550	342243	5568	311234	*343331
	-----			
5551	342243	5569	124434	*124421
	-----			
5552	222123	5570	-----	-----
	-----			
5553	243331	5571	323321	-----
	-----			
5554	342232	5572	232423	-----
	-----			
5555	134123	5573	-----	-----
	-----			
5556	343343	5574	231233	-----
	-----			
5557	133443	5575	323431	-----
	-----			
5558	244134	5576	121231	-----
	-----			

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 x2 1- Blank Width  
 2-.240 2-.220  
 3-.220 3-.180  
 4-.200 4-.140

Series Z5001-6000	KAWASAKI (5577-5612)		Blank X103
Number	Code	Number	Code
5577	101133	5595	315232
5578	222231	5596	341341
5579	232313	5597	113324
5580	323341	5598	241212
5581	233422 *233442	5599	133113
5582	242122 *342122	5600	233332
5583	322441 *344342	5601	233332 *344443
5584	241344	5602	*223332
5585	223241	5603	321134
5586	133323	5604	333243
5587	324134	5605	322331
5588	321242	5606	134222
5589	242433	5607	123334
5590	132341	5608	322315
5591	213233 *232133	5609	234122
5592	212233	5610	212313
5593	323133 *244332	5611	133134
5594	344122 *233122	5612	323413

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 3-.220  
 2-.240 4-.200  
 \* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*

Series Z5001-6000	KAWASAKI (5613-5648)		Blank X103	
Number	Code	Number	Code	
5613	231211	5631	331411	
5614	131333	5632	134132	
5615	232334 *232343	5633	341224	
5616	313313 *311313	5634	311324	
5617	344133	5635	212434	
5618	231211 *333344	5636	133311 *122332	
5619	224134	5637	223221	
5620	131234	5638	312132	
5621	222413	5639	342313 *342414	
5622	331313	5640	313412	
5623	344134	5641	243322 *112311	
5624	313213 *312213	5642	224213	
5625	221331	5643	123322 *123323	
5626	321123 *234231	5644	134213	
*321124		5645	222334	
5627	334231	5646	323231	
5628	243313	5647		
5629	131221 *131212	5648	312434	
5630	213134			

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 x2 1- Blank Width  
 2-.240 2-.220  
 3-.220 3-.180  
 4-.200 4-.140

Series Z5001-6000	KAWASAKI {5649-5684}	BLANK X103	
Number	Code	Number	Code
5649	234113	5667	211211
5650	113223	5668	211234
5651	344324	5669	444411 *333311
5652	323213 *131343	5670	242132
5653	243122	5671	114324
5654	213242	5672	113212
5655	134321	5673	342412
5656	213411	5674	322223
5657	342311	5675	232115
5658	244132	5676	121231
5659	213213	5677	244213
5660	212244	5678	344322
5661	211123	5679	233413 *232313
5662	321332	5680	131311 *242422
5663	331113 *233213	5681	223124
*224244		5682	321212 *242422
5664	331113	5683	344342
5665	124412 *124413	5684	132121
5666	112242 *112241		

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 3-.220  
 2-.240 4-.200  
 \* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*

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# Motorcycle & Motorboat

Series 25001-6000	KAWASAKI (5685-5710)		BLANK X103	
Number	Code	Number	Code	
5685	122331	5703	214122	*212221
5686	343213	5704	132112	
5687	322344	5705	112321	
5688	224231	5706	334434	
5689	343213	5707	322234	
*343231	*212131	5708	223322	*232121
5690	124232	5709	132411	
5691	212331	5710	121213	
5692	341432	5711	344131	
5693	323112	5712	324241	
5694	222213	5713	234111	
5695	112322	5714	232324	*231324
*122332	*112332	5715	*232313	
5696	123242	5716	211222	
5697	234312	5717	122131	
5698	344124	5718	114134	*333412
5699	324324	5719	312241	*312231
5700	242134	5720	224332	
5701	132112		223214	*122223
5702	312334			

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 x2 1-Blank Width  
 2-.240 2-.220  
 3-.220 3-.180  
 4-.200 4-.140

Series 25001-6000	KAWASAKI (5721-5756)		BLANK X103	
Number	Code	Number	Code	
5721	343112	5739	124344	
5722	332233 *322233	5740	341132	
5723	241311	5741	122412	
5724	132433	5742	121134	
5725	222134	5743		
5726	341244 *334244	5744	124113 *124133	
5727		5745	341231 *331231	
5728	233224	5746	312411	
5729	242334	5747	323342	
5730	343442 *103232	5748	113331	
5731	211334	5749	312121	
5732	343211	5750	343221 *334424	
5733	331331 *331441	5751	334411	
5734	122423	5752	244233	
5735	224112	5753	344332	
5736	344311	5754	311131 *231233	
5737	322122 *422122	5755	211231	
5738	322123 *221223	5756	134123	

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 3-.220  
 2-.240 4-.200  
 \* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*

Series 75001-6000	KAWASAKI (5757-5792)		PLANK X103		
Number	Code	Number	Code		
5757	242411	5775	223311		
5758	343433	5776	234232	*241324	
5759	112213	5777	233133		
5760	344113	5778	122234		
5761	113441	5779	232221		
5762	224211	*244233	5780	343441	
5763	343413		5781	311122	
5764	331241		5782	232221	
5765			5783	131322	
5766	234232		5784	224411	
5767	134312		5785	341211	
5768	134112		5786	242121	
5769	344221		5787	123411	
5770	234412		5788	211121	*211123
5771	324124	*113441	5789	322441	*312441
5772	132211		5790	243221	*243133
5773			*321324	5791	343424
5774	312211			5792	101124

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 x2 1-Blank Width  
 2-.240 2-.220  
 3-.220 3-.180  
 4-.200 4-.140

Series 75001-6000	KAWASAKI (5793-5828)		BLANK A103
Number	Code	Number	Code
5793	342133	5811	133223
5794	212311	5812	134341
5795	134411	5813	343121
5796	342443	5814	221243 *221143
5797	242211	5815	221213 *221243
5798	122311	5816	221122
5799	212413 *213413	5817	112233
5800	434123 *113131	5818	111223
5801	344513	5819	333212
5802	322211	5820	313331
5803	323411	5821	231123
5804	233321	5822	112323
5805	213234 *213224	5823	131221
5806	133122	5824	344431 *344421
5807	233321 *121343	5825	312112
*112233		5826	132244
5808	342111	5827	334341
5809	324342 *124341	5828	232124
5810	232311		

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 3-.220  
 2-.240 4-.200  
 \* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*

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# Motorcycle & Motorboat

Series 25001-6000	KAWASAKI (5829-5864)		BLANK X103	
Number	Code	Number	Code	
5829	112411	5847	223422	*332422
5830	311223	5848	223112	
5831	332431	5849	333221	
5832	215112	5850	322322	
5833	112222	5851	212421	
5834	334433	5852	121242	*131342
5835	311311		*131343	
5836	231244	5853	334422	
5837	133131	5854	243111	
5838	121332	5855	122443	*112244
5839	112134	5856	324421	
5840	334241	5857	244312	
5841	312341	5858	213321	
5842	222233	5859	333421	
5843	222131	5860	212111	
5844	121224	5861	434123	
5845	334112	5862	244321	
5846	243241	5863	343121	*133234
			*133233	
		5864	112341	

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 2-.240 3-.220 4-.200  
 1-Blank Width 2-.220 3-.180 4-.140

Series 25001-6000	KAWASAKI (5865-5900)		BLANK X103	
Number	Code	Number	Code	
5865	213424	5883	132224	*331224
5866	343224	5884	233341	
5867	412323	5885	221224	
5868	124111	5886	134334	
5869	331222	5887	112224	
5870	224121	5888		
5871	313423	5889	112134	
5872	224343	5890		
5873	124241	5891	112121	
5874	351212	5892	334211	
5875	224121	5893	243441	
5876	113423	5894	123341	
5877	243234	5895		
5878		5896	434344	*334233
5879		5897	131334	*131344
5880	113443	5898	213244	*213211
5881	344111	5899	112433	*122422
	*124133			
5882	124133	5900	342124	

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 2-.240 3-.220 4-.200  
 \* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*

Series 25001-6000	KAWASAKI (5901-5936)		BLANK X103	
Number	Code	Number	Code	
5901	123121	5919	331124	
5902	242244	5920	232243	*232343
5903	333443	5921	124443	*122443
5904	222323	5922	143314	*111232
5905	243111	5923	313443	
5906	334222	5924	311241	
5907	112424	5925	121321	
5908	211244	5926	334323	
5909	214331	5927	313111	
	*123443	5928	212432	
5910	241124	5929	124443	
5911	213344	5930	344344	
5912	333111	5931	244224	
5913	323323	5932	123312	
5914	231134	5933	243443	*232332
5915	124441	5934		
5916	324333	5935	223342	
5917	113124	5936	122434	
5918	223422			

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 2-.240 3-.220 4-.200  
 1-Blank Width 2-.220 3-.180 4-.140

Series 25001-6000	KAWASAKI (5937-5972)		BLANK X103	
Number	Code	Number	Code	
5937		5955	213442	
5938	324221	5956	323244	
5939	223443	5957	334334	
5940		5958	322434	
5941	334312	5959	123244	*244431
5942	113311	5960	234342	
5943	224431	5961	331412	*322111
5944	323132	5962	324434	
5945	333432	5963	124212	
5946	323242	5964	232323	
5947	124124	5965	234434	*134424
5948	112342	5966	333322	
5949	324313	5967	441243	*331432
5950	244431		*331243	
5951	224321	5968	223312	
5952	323422	5969	124434	
5953	321117	5970	224432	
5954	113434	5971	233331	
		5972	323442	

Spacing: -.100 -.200 -.300 -.400 -.500 -.600  
 Depth: 1-.260 2-.240 3-.220 4-.200  
 \* Possible Alternate Code Numbers.  
 \*\*\* USE DEPTH KEY SET #204 \*\*\*





# Motorcycle & Motorboat

Series 25001-6000		KAWASAKI (1973-1999)		BLANK 3103	
Number	Code	Number	Code		
5973	132343	5987	221344		
5974	223441	5988	242422		
5975	133342	5989	341334		
5976	332343	5990	234421		
5977	323141	5991			
5978	131344	5992	244422		
5979	134433	5993	232341		
5980	222341	5994	212441		
5981	124333	5995	122111		
5982	312433	5996	311344		
5983	133441	5997	233434		
5984		5998	243344		
5985	234423	5999	234331		
5986	244343	6000	322334		
		4 (5000)			
Spacing: -.100 -.200 -.300 -.400 -.500 -.600					
Depth: 1-.260 x2 1- Blank Width					
2-.240 2-.220					
3-.220 3-.180					
4-.200 4-.140					

\* Possible Alternate Code Numbers.

\*\*\* USE DEPTH KEY SET #204 \*\*\*

+ We are continually finding more New Codes and Alternate Codes for this Series. If you come across any, Please Contact Us At:  
KEYS-BY-CODE (407)577-6195  
PO Box 90 Ocoee, FL 34761

POLARIS ( 4-WHEELERS )			
SERIES:	3201-3250	BLANK:	YM57(X69)
Number	Code	Number	Code
3201	11223	3226	22333
3202	11220	3227	23121
3203	11321	3228	23211
3204	11323	3229	23221
3205	12123	3230	23231
3206	12223	3231	23311
3207	12225	3232	23321
3208	12322	3233	23331
3209	12332	3234	31133
3210	13123	3235	31213
3211	13221	3236	31223
3212	13221	3237	31233
3213	13312	3238	32121
3214	13323	3239	32131
3215	13333	3240	32211
3216	21133	3241	32221
3217	22131	3242	32231
3218	21312	3243	32311
3219	21323	3244	32321
3220	21333	3245	32331
3221	22131	3246	33121
3222	22213	3247	33211
3223	22232	3248	33221
3224	22312	3249	33231
3225	22323	3250	33312

Spacing: -.150 -.250 -.350 -.450 -.550

Depth: 1-.295 x2 1- Blank Width  
2-.265 2-.235  
3-.235 3-.175

\*\*\* USE DEPTH KEY SET #463 \*\*\*

POLARIS ( 4-WHEELERS )			
SERIES:	3251-3300	BLANK:	YM47(X69)
Number	Code	Number	Code
3251	11223	3276	22333
3252	11233	3277	23121
3253	11323	3278	23211
3254	11333	3279	23221
3255	12132	3280	23231
3256	12223	3281	23311
3257	12233	3282	23321
3258	12322	3283	23332
3259	12332	3284	31132
3260	13123	3285	31213
3261	13221	3286	31223
3262	13231	3287	31233
3263	13312	3288	32121
3264	13323	3289	32131
3265	13333	3290	32211
3266	21133	3291	32221
3267	21231	3292	32231
3268	21312	3293	32311
3269	21323	3294	32322
3270	21333	3295	32332
3271	22131	3296	33121
3272	22213	3297	33211
3273	22232	3298	33221
3274	22312	3299	33231
3275	22323	3300	33312

Spacing: -.150 -.250 -.350 -.450 -.550

Depth: 1-.295 x2 1- Blank Width  
2-.265 2-.235  
3-.235 3-.175

\*\*\* USE DEPTH KEY SET #463 \*\*\*

MOTORCYCLE ACCESSORIES HIDSON			
Vector - Components & Tour Pack			
SERIES:	CB301-426	Blank:	301(1041T)
Number	Code	Number	Code
301	23412	326	34143
302	23414	327	43312
303	23421	328	43314
304	23432	329	43334
305	23434	330	43341
306	23441	331	43343
307	23443	332	11232
308	31232	333	11234
309	31234	334	11243
310	31241	335	11432
311	31243	336	11434
312	31412	337	11443
313	31314	338	14132
314	31421	339	14134
315	31432	340	14143
316	31434	341	14332
317	31441	342	14334
318	31443	343	14331
319	32132	344	14332
320	32134	345	14334
321	32141	346	14341
322	32143	347	14343
323	34132	348	14332
324	34141	349	14334
325	34141	350	14343

Spacing: -.127 -.223 -.319 -.415 -.511

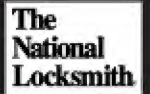
Depth: 1-.250 X-.220 4-.190  
2-.230 3-.210 5-.170

\*\*\* USE DEPTH KEY SET #602 \*\*\*

\* X is Equivalent to a 2 1/2 Cut(When Used)

MASTER KEYS ARE AVAILABLE





Continued from page 134

# Motorcycle & Motorboat

## MOTORCYCLE ACCESSORIES

### HUDSON

#### Vetter Fairings

Series: H280-94 Blank: H01(Hudson)

Number	Code
80	4X432
81	4X433
82	4X434
83	4X435
84	4X436
85	4X437
86	4X438
87	4X439
90	33311
91	33312
92	33313
93	33314
94	33315

Spacing: -.127-.223-.319-.415-.511

 Depth: 1-.250 2-.210 3-.170  
 4-.230 5-.190  
 X-.220

\*\*\* USE DEPTH KEY SET #602 \*\*\*

MASTER KEYS ARE AVAILABLE

## MOTORCYCLE ACCESSORIES

### JABSON

#### Vetter - Compartment & Tour Pack

Series: G5301-150 Blank: H03(G1127B)

Number	Code	Number	Code
301	23412	325	34143
302	23413	326	34144
303	23414	327	34145
304	23415	328	34146
305	23416	329	34147
306	23417	330	34148
307	23418	331	34149
308	23419	332	34150
309	23420	333	34151
310	23421	334	34152
311	23422	335	34153
312	23423	336	34154
313	23424	337	34155
314	23425	338	34156
315	23426	339	34157
316	23427	340	34158
317	23428	341	34159
318	23429	342	34160
319	23430	343	34161
320	23431	344	34162
321	23432	345	34163
322	23433	346	34164
323	23434	347	34165
324	23435	348	34166
325	23436	349	34167
		350	34168

Spacing: -.127 -.223 -.319 -.415 -.511

 Depth: 1-.250 X-.220 4-.190  
 2-.230 3-.210 5-.170

\*\*\* USE DEPTH KEY SET #602 \*\*\*

\* X is Equivalent to a 2 1/2 Cut(When Used)

MASTER KEYS ARE AVAILABLE

## MOTORCYCLE ACCESSORIES

### HUDSON

#### Vetter - Compartment & Tour Pack

Series: G5301-150 Blank: H03(G1127B)

Number	Code	Number	Code
351	14552	376	12141
352	14553	377	12142
353	25425	378	12525
354	25426	379	12526
355	25427	380	12527
356	25428	381	12528
357	25429	382	12529
358	25430	383	14121
359	31212	384	14122
360	31213	385	14525
361	35325	386	32112
362	35326	387	32113
363	35327	388	32114
364	35328	389	41132
365	35329	390	41133
366	35330	391	41134
367	52324	392	23212
368	52325	393	23213
369	52326	394	23214
370	52327	395	23215
371	52328	396	23216
372	11214	397	23217
373	11412	398	32525
374	12132	399	32526
375	12133	400	32527

Spacing: -.127-.223-.319-.415-.511

 Depth: 1-.250 X-.220 4-.190  
 2-.230 3-.210 5-.170

\*\*\* USE DEPTH KEY SET #602 \*\*\*

MASTER KEYS ARE AVAILABLE

## MOTORCYCLE ACCESSORIES

### HUDSON

#### Vetter - Compartment & Tour Pack

Series: G5301-150 Blank: H03(G1127B)

Number	Code	Number	Code
401	32543	426	12114
402	32544	427	12115
403	34112	428	14112
404	34113	429	14113
405	34114	430	14114
406	34115	431	14115
407	34116	432	14116
408	34117	433	14117
409	34118	434	14118
410	34119	435	14119
411	41214	436	14120
412	41215	437	14121
413	41216	438	14122
414	41217	439	14123
415	41218	440	14124
416	41219	441	14125
417	41220	442	14126
418	41221	443	14127
419	41222	444	14128
420	11212	445	14129
421	11213	446	14130
422	11414	447	14131
423	11415	448	14132
424	11416	449	14133
425	12112	450	14134

Spacing: -.127 -.223 -.319 -.415 -.511

 Depth: 1-.250 X-.220 4-.190  
 2-.230 3-.210 5-.170

\*\*\* USE DEPTH KEY SET #602 \*\*\*

\* X is Equivalent to a 2 1/2 Cut(When Used)

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## Motorcycle & Motorboat

### MOOTORCYCLE ACCESSORIES

#### HUDSON

#### VETTER - Compartment & Tour Pack

Series: 6800-650 Blank: H03(011212)

Number	Code	Number	Code
451	12312	476	14252
452	52352	477	14254
453	52352	478	21125
454	12312	479	21125
455	12334	480	21145
456	12341	481	21311
457	12342	482	21323
458	12411	483	21325
459	12422	484	21352
460	12434	485	21354
461	12445	486	24123
462	13123	487	24135
463	13125	488	24145
464	13145	489	24255
465	13311	490	25253
466	13323	491	32411
467	13325	492	32423
468	13345	493	32425
469	13352	494	32445
470	13354	495	32452
471	13323	496	32454
472	13345	497	33123
473	13352	498	33125
474	14211	499	33145
475	14245	500	33314

Spacing: -.127 -.223 -.319 -.415 -.511

Depth: 1-.150 2-.220 3-.210 4-.190 5-.170

\*\*\* USE DEPTH KEY SET #602 \*\*\*

\* X is Equivalent to a 2 1/2 Cut(When Used)

MASTER KEYS ARE AVAILABLE

### MOOTORCYCLE ACCESSORIES

#### HUDSON

#### VETTER - Compartment & Tour Pack

Series: 6800-650 Blank: H03(011228)

Number	Code	Number	Code
501	21345	526	32423
502	33323	527	32447
503	33325	528	33323
504	33345	529	33345
505	33352	530	33352
506	33354	531	33354
507	33523	532	33513
508	33545	533	33545
509	33552	534	34255
510	34211	535	34254
511	34245	536	34421
512	34252	537	34434
513	34254	538	34445
514	34411	539	34454
515	34425	540	34523
516	34441	541	34554
517	34443	542	35325
518	35323	543	35324
519	35345	544	35343
520	35354	545	35345
521	43352	546	35353
522	4X152	547	35423
523	4X352	548	35454
524	52343	549	3545X
525	52352	550	354X3

Spacing: -.127 -.223 -.319 -.415 -.511

Depth: 1-.150 2-.220 3-.210 4-.190 5-.170

\*\*\* USE DEPTH KEY SET #602 \*\*\*

\* X is Equivalent to a 2 1/2 Cut(When Used)

MASTER KEYS ARE AVAILABLE

Continued on page 140





Continued from page 138

# Motorcycle & Motorboat

## MOTORCYCLE ACCESSORIES

### HUDSON

KODIA - Compartment &amp; Tour Pack

Series:	MM101-150	Blank:	K01(1041T)
Number	Code	Number	Code
101	X1133	126	X1433
102	X1X33	127	X2X33
103	X3433	128	XX433
104	X3X31	129	4X433
105	X3X33	130	44X33
106	4X533	131	44533
107	11233	132	11X55
108	1X253	133	11455
109	1X453	134	1X255
110	14453	135	1X455
111	X1253	136	X1255
112	XX253	137	X1455
113	XX453	138	X3255
114	X4253	139	X3133
115	X4553	140	41253
116	4X453	141	X1X31
117	44253	142	X3431
118	44553	143	1AX13
119	11233	144	X1213
120	11433	145	XX113
121	1X133	146	XX113
122	1XX33	147	11203
123	14433	148	11433
124	X1133	149	1XX33
125	X1X33	150	1X433

Spacing: -.127 -.223 -.319 -.415 -.511

 Depths: 1-.250 X-.220 4-.190  
 2-.230 3-.210 5-.170

\*\*\* USE DEPTH KEY SET #601 \*\*\*

\* X is Equivalent to a 2 1/2 Cut(When Used)

## SNOWMOBILES

1980-81 YAMAHA (All models)

Series:	3101-3150	Blank:	X77
Number	Code	Number	Code
3101	11223	3126	22333
3102	11233	3127	23121
3103	11323	3128	23211
3104	11353	3129	23221
3105	12132	3130	23231
3106	12233	3131	23311
3107	12333	3132	23322
3108	12322	3133	23332
3109	12332	3134	31132
3110	13123	3135	31213
3111	13221	3136	31223
3112	13231	3137	31233
3113	13312	3138	32121
3114	13323	3139	32151
3115	13333	3140	32211
3116	21133	3141	32221
3117	21231	3142	32231
3118	21312	3143	32311
3119	21323	3144	32322
3120	21333	3145	32332
3121	22131	3146	33121
3122	22212	3147	33211
3123	22232	3148	33221
3124	22312	3149	33231
3125	22323	3150	33312

Spacing: -.150-.250-.350-.450-.550

 Depths: 1-.292 x2 Blank Width  
 2-.262 2-.232  
 3-.232 3-.172

\*\*\* USE DEPTH KEY SET #404 \*\*\*

## SNOWMOBILES

1980-81 YAMAHA (All models)

Series:	3201-3250	Blank:	X69
Number	Code	Number	Code
3201	11223	3226	22333
3202	11233	3227	23121
3203	11323	3228	23211
3204	11333	3229	23221
3205	12132	3230	23231
3206	12233	3231	23311
3207	12233	3232	23332
3208	12322	3233	23332
3209	12332	3234	31152
3210	13123	3235	31213
3211	13221	3236	31223
3212	13231	3237	31233
3213	13312	3238	32121
3214	13323	3239	32131
3215	13333	3240	32211
3216	21133	3241	32221
3217	21231	3242	32231
3218	21312	3243	32311
3219	21323	3244	32322
3220	21333	3245	32332
3221	22131	3246	33121
3222	22212	3247	33211
3223	22232	3248	33221
3224	22312	3249	33231
3225	22323	3250	33312

Spacing: -.150-.250-.350-.450-.550

 Depths: 1-.292 x2 Blank Width  
 2-.262 2-.232  
 3-.232 3-.172

\*\*\* USE DEPTH KEY SET #404 \*\*\*

Continued on page 142



Continued from page 140

## Motorcycle & Motorboat

Briggs & Stratton				Briggs & Stratton			
Series		Blank		Series		Blank	
SD 1-200		1098M		SD 1-200 (Cont'd)		1098M	
Number	Code	Number	Code	Number	Code	Number	Code
1	11313	26	13513	51	15515	76	31553
2	11315	27	13515	52	15531	77	31555
3	11351	28	13531	53	15533	78	33113
4	11353	29	13533	54	15535	79	33115
5	11513	30	13535	55	31133	80	33131
6	11515	31	13551	56	31135	81	33133
7	11531	32	13553	57	31151	82	33135
8	11533	33	15113	58	31153	83	33151
9	11535	34	15115	59	31155	84	33153
10	11551	35	15131	60	31311	85	33155
11	11553	36	15133	61	31313	86	33511
12	13113	37	15135	62	31315	87	33513
13	13115	38	15151	63	31331	88	33515
14	13131	39	15153	64	31333	89	33531
15	13133	40	15155	65	31335	90	33533
16	13135	41	15311	66	31351	91	33535
17	13151	42	15313	67	31353	92	33551
18	13153	43	15315	68	31355	93	33553
19	13155	44	15331	69	31511	94	35113
20	13311	45	15333	70	31513	95	35115
21	13313	46	15351	71	31515	96	51155
22	13315	47	15353	72	31531	97	51311
23	13351	48	15355	73	31533	98	51313
24	13353	49	15511	74	31535	99	51315
25	13511	50	15513	75	31551	100	51331

Continued on page 144



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Continued from page 142

# Motorcycle & Motorboat

Briggs & Stratton				Briggs & Stratton			
Series		Blank		Series		Blank	
SD 1-200 (Cont'd)		1098M		SD 1-200 (Cont'd)		1098M	
Number	Code	Number	Code	Number	Code	Number	Code
101	11313	126	13513	151	15515	176	31553
102	11315	127	13515	152	15531	177	31555
103	11351	128	13531	153	15533	178	33113
104	11353	129	13533	154	15535	179	33115
105	11513	130	13551	155	31133	180	33131
106	11515	131	13553	156	31135	181	33133
107	11531	132	13555	157	31151	182	33135
108	11533	133	15113	158	31153	183	33151
109	11535	134	15115	159	31155	184	33153
110	11551	135	15131	160	31311	185	33155
111	11553	136	15133	161	31313	186	33511
112	13113	137	15135	162	31315	187	33513
113	13115	138	15151	163	31331	188	33515
114	13131	139	15153	164	31333	189	33531
115	13133	140	15155	165	31335	190	33533
116	13135	141	15311	166	31351	191	33535
117	13151	142	15313	167	31353	192	33551
118	13153	143	15315	168	31355	193	33553
119	13155	144	15331	169	31511	194	35113
120	13311	145	15333	170	31513	195	35115
121	13313	146	15351	171	31515	196	51153
122	13315	147	15353	172	31531	197	51311
123	13351	148	15355	173	31533	198	51313
124	13353	149	15511	174	31535	199	51315
125	13311	150	15513	175	31551	200	51331

Spacing - .100-.243-.336-.429-.522

Depth  
1-.200  
3-.220  
5-.190

Cole			
Series		Blank	
0101-112		1141K	
Number	Code		
101	12323		
102	10123		
103	10121		
104	12123		
105	12321		
106	20323		
107	12163		
108	20101		
109	02101		
110	02121		
111	20321		
112	12301		

Spacing - .100-.190-.280-.370-.460

Depth  
0-.210  
1-.190  
2-.170  
3-.150

Continued on page 146



Continued from page 144

## Motorcycle & Motorboat

Cole		Columbia	
Series	Blank	Series	Blank
F10-21	11411	C1-12	10140X
Number	Code	Number	Code
F10	20302	C1	534
11	02240	2	536
12	03032	3	538
13	12124	4	554
14	20330	5	556
15	14233	6	558
16	13440	7	574
17	04411	8	576
18	14301	9	578
19	13044	10	734
20	14240	11	736
21	12420	12	738

<u>Spacing</u>	- .140-.280-.420-.560-.700
<u>Depths</u>	0-.260
	1-.255
	2-.235
	3-.215
	4-.195

<u>Spacing</u>	- .200-.360-.520
<u>Depths</u>	1-.276
	2-.258
	3-.240
	4-.222
	5-.204
	6-.186
	7-.168
	8-.150

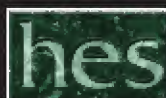
Note: Many of this series use ward cuts. When necessary, the ward cut should be .060 from the shoulder, .060 in width and .040 deep.



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## THE NT FALCON RELEVER™ KIT

*"NT Falcon has developed a mortise lock Re-lever™ Kit that replaces most manufacturers' mortise knobs with a Falcon lever in ten minutes or less."*

Private and public facilities across the country are seeking ways to comply with the Americans with Disabilities Act quickly, efficiently and – because of budgetary constraints – economically. A new breakthrough by NT Falcon Lock, a subsidiary of the Newman Tonks Group, offers locksmiths an excellent opportunity to help their customers comply with ADA in a way that meets all three of those criteria. NT Falcon has developed mortise lock Re-lever™ Kits that replace most manufacturers' mortise knobs with a Falcon lever in ten minutes or less. (See photograph 1.) Employing an easy three-step process, the new Re-lever Kits provide both private and public facilities such as schools and hospitals with the quickest, most cost-effective solution to meeting ADA requirements.



1. The NT Falcon Re-lever™ Kit is able to convert knob mortise sets to lever in 10 minutes or less.

elbow or upper arm, eliminating the need to grasp. With NT Falcon's Re-lever Kits, doors throughout an entire facility, can be retrofitted in a relatively short time, helping the facility come into compliance.

Take public facilities such as schools, for example. Under ADA guidelines, public facilities such as schools must make each program or class accessible. Schools can provide accessibility either by altering current facilities, acquiring or building new facilities, relocating a service or program to an accessible facility, or providing similar services at other accessible facilities. In most cases, altering current facilities by retrofitting the knobs with levers is arguably the easiest, most economical way to meet requirements. NT Falcon's Re-lever Kits make it even easier.

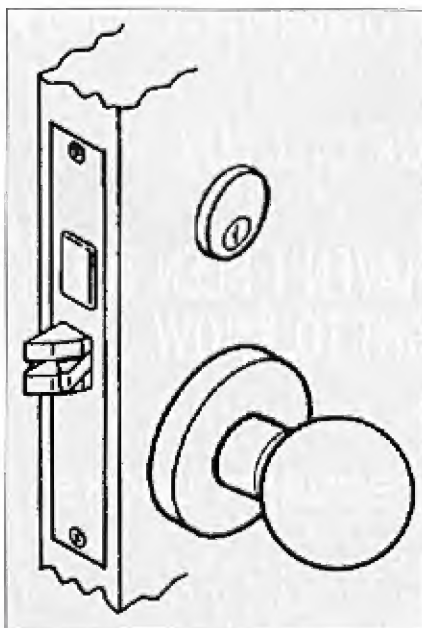
### As Easy As One-Two-Three

Unlike other conversion situations, installing a Falcon lever on an existing mortise knob lockset does not require the removal of the locking unit. NT Falcon designed the Re-lever Kits specifically to adapt to other manufacturers' knob locking units.

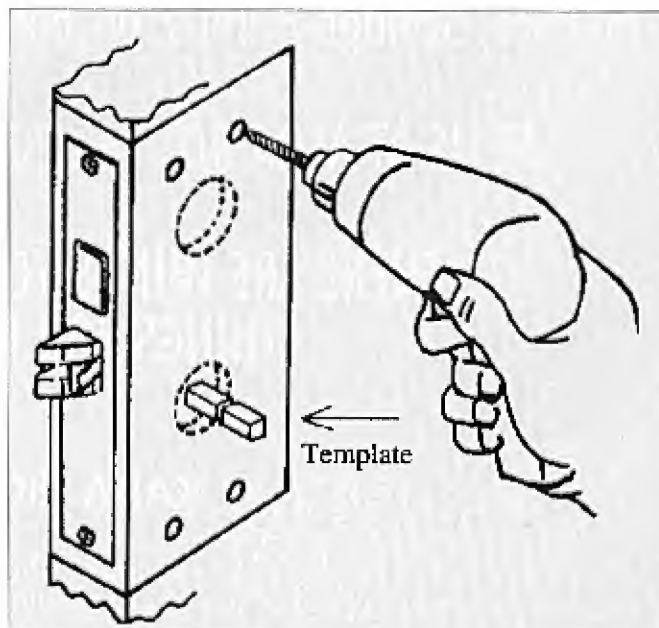
As a result, the three-step process is very easy. First, remove the old mortise knob trim. (See illustration 2.)

### Growing Demand For Levers

Demand for replacing knobs with levers will increase as more facilities begin compliance programs. Doors with conventional knob hardware present a virtually impenetrable barrier for persons with upper limb impairments who have extreme difficulty grasping and turning knobs. However, these types of barriers are also among the easiest and least expensive barriers to move. Levers can be easily turned with an

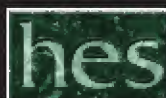


2. Remove the old knob trim.

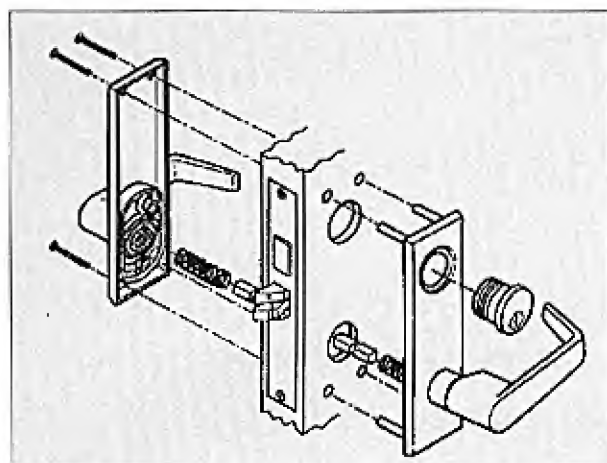


3. Place template over door and drill the four holes required.





Continued from page 148



4. Install Re-lever hardware.

Second, drill four holes in the door using the re-lever kit template. (See illustration 3.) And finally, install the preassembled trim package. (See illustration 4.)

The specially designed Falcon levers work with most other mortise lock manufacturers' locking units, even the old-fashioned cast versions.

No other adapters are needed.

#### Power Spring™ And Other Features

All NT Falcon Lock Re-lever Kits feature Power Spring™ which protects against lever sag. Three lever trim styles are available: Avalon, Dane and Quantum. These kits comply with Underwriters Laboratories (UL) listing requirements.

For more information contact NT Falcon Lock, 7345 Orangewood Ave., Garden Grove, CA 92641; or call 714-373-2880.



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Series of Conferences:

Fire: June 9-11, Boston  
September 15-17, Dallas  
October 20-22, Orlando

Access Control:  
June 23-25, San Jose  
August 18-20, Atlanta

CCTV: October 27-29, Baltimore  
November 3-5, Memphis  
December 8-10, Ft.  
Lauderdale

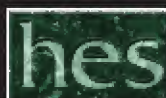
Contact: Joi Keddy, (800) SIDC-  
NOW.

September 9-11, 1994  
The 1994 T.A.O.L. Convention  
Sheraton Toronto East Hotel  
Contact: (416) 321-2219.

October 13-16, 1994  
Penn-Ohio Locksmiths' Assn., Inc.  
Trade Show '94  
Holiday Inn-Independence, OH  
Contact: Martha Egger or Jerry  
Egger, (216) 676-8464 or Sally  
Paris (116) 267-2693.

October 15-18 1994  
Door and Hardware Institute  
Convention and Trade Show  
Fontainebleau Hilton, Miami  
Beach, FL  
Contact: DHI, 14170 Newbrook  
Dr., Chantilly, VA 22021 (703)  
222-2010.





## POWER OPERATORS MADE EASY

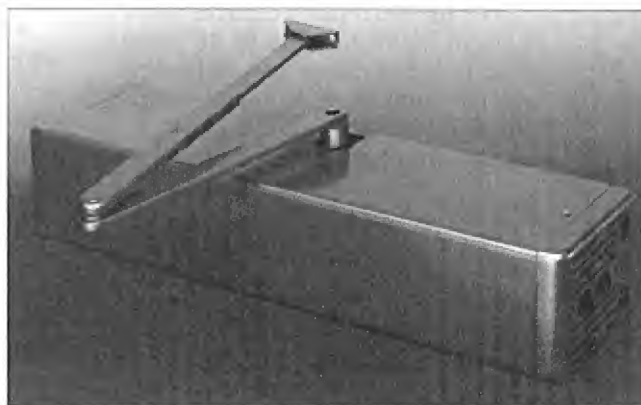
*"In an industry scurrying to meet ADA door requirements, Dorma introduces the ED 800 door opener/assist."*

Power operated door controls are an increasingly popular solution to the problem of making buildings accessible to the physically challenged. They supply auxiliary power to the door, reducing or eliminating the need for the user to exert force to get the door open, while ensuring that there will be sufficient force to close and latch the door securely.

The Americans with Disabilities Act has stimulated demand for all types of units that supply auxiliary power to the door, particularly the more economical, low energy, closer-based units. These units are basically door closers that have been enhanced with a power mechanism. The power mechanism supplies the auxiliary power needed in the opening sequence, while the closer reliably controls the closing cycle.

Low energy, closer-based units are found on a very broad range of openings that fall under the ADA mandate, including smaller commercial buildings, schools, medical facilities, retail establishments, banks and many other "places of public accommodation." They make buildings accessible to both the physically challenged and to a much larger population that may need occasional assistance, such as the elderly or persons carrying packages.

These units represent a growing market opportunity, but locksmiths have not always been able to take full advantage of it. The units may be too expensive for their customers. In some cases, distribution and installation are limited to factory-authorized personnel. In still other instances, existing units on the market present installation and maintenance difficulties that locksmiths are reluctant to tackle.



The ED800 by Dorma.

Stocking requirements can also be a problem. The number of different models and accessories required to adequately cover the market adds up to too substantial a financial commitment for many.

Dorma Door Controls has directly addressed these problems with the introduction of the ED 800, a closer-based, low energy unit which functions as a traditional door closer until the instant a helping hand is needed. The ED 800 combines Dorma's TS83 closer and a sophisticated, microprocessor-controlled electromechanical unit to create an "intelligent" door closer capable of sensing the door environment and responding appropriately. (See photograph 1.)

### How It Works

The ED 800 normally functions as an ANSI Grade 1 door closer, providing smooth, fully controlled opening and closing for internal or external doors. Upon receipt of the proper signal, it provides auxiliary power to the door.

The ED 800 is unusual in that it functions as either a low energy operator or a low energy power assist unit. As a low-energy operator, the ED 800 provides the power to open the door. As a power-assist unit, the ED 800 provides auxiliary power that reduces the opening force the user must exert, allowing the door to open

with a light push.

The ED 800 can be field-configured as either a power open or power assist unit simply by flicking a single switch.

Like other low-energy units, the ED 800 responds to a variety of external triggers ranging from hard-wired push pads to motion and presence sensors. It can also be triggered by hand-held radio frequency transmitters that are ideal for retrofit installations in that they eliminate the need to run wires from the trigger to the unit.

Unlike other units, however, it is equipped with a microprocessor that enables it to sense and respond directly to door conditions and the actions of the user.

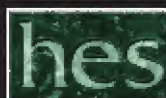
The ED 800 relies on digital technology and operates according to a "closed loop" system similar to that employed in an automobile's cruise control. With cruise control, the automobile's microprocessor continuously adjusts throttle position to maintain constant vehicle speed in the face of real-world highway conditions like hills and curves.

The ED 800 microprocessor continuously monitors door position, movement status and the electric current that is being used to open the door. It compares that to pre-established parameters for how much current *should be* required under normal conditions ... and processes this information to determine if the door is opening too fast or too slow, whether it has encountered an object, etc. The microprocessor then immediately signals the mechanical portion of the unit to correct for the condition.

### Selecting the Right Unit

Selecting (and stocking) the right model for a particular application is easy. The ED 800 is always mounted





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on the door frame and can be powered either through hard wiring or power cords. It is available in a variety of finishes in one universal design with a choice of two arm options (push-side double lever and pull-side slide track) that permit it to be configured for all installations, push-side and pull-side mounts and left or right hand doors.

The ED 800 reliably controls doors from 36"/100 pounds to 48"/200 pounds. It interfaces smoothly with electric strikes, exit devices with electric latch retraction or other access control system components.

#### Installation

The ED 800 requires only one person for installation. Installation of the unit itself (not including wiring) normally requires the same time as a standard door closer. After the door has been prepped, simple hand tools are all that is required to do the job. The ED 800 is a non-handed unit. Installation procedures are similar to those for a standard door closer. Adjustments for opening angle, hold open time and opening speed are quickly accomplished by turning a series of three dials.

There are four different ways that the ED 800 can be ordered and installed:

- ED 800J - Top jamb installation where the unit is attached to the header on the push side and the arm shoe is attached to the door. The standard unit accommodates a reveal from 0" to 3". For reveals of 3" to 7", the CS10R arm bar and shoe must be specified.

- ED 800J Drop - Top jamb installations where the unit is located to clear a low ceiling condition on the push side of the door.

- ED 800J Drop x S30 Plate - Top jamb installations where the unit is located to clear a low ceiling condition on the push side of the door; except when the door top rail is less than 4-5/8", minus 2" required.

- ED 800T - Track installation where the unit is attached to the header on the pull side and a track arm assembly is attached to the top of the door.

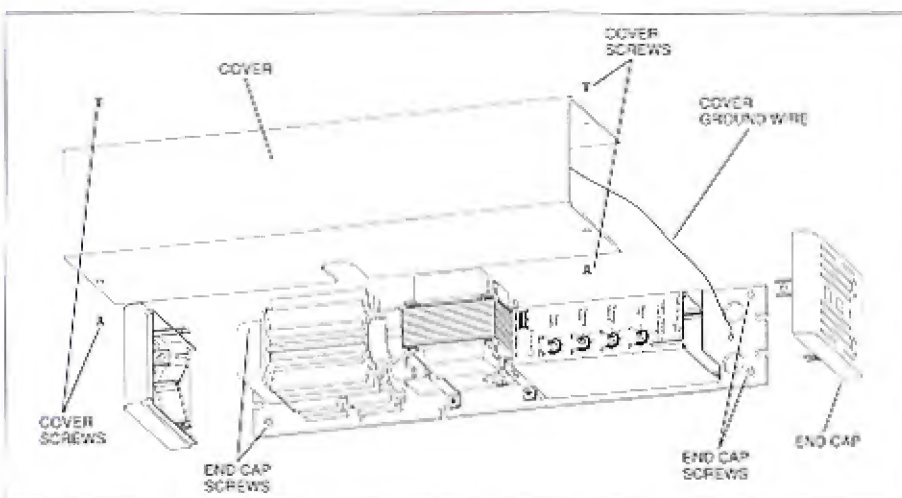
#### ED 800J/Top Jamb Installation

The ED 800J top jamb installation is the most commonly encountered installation type. Requirements for other configurations vary somewhat in detail, but require essentially the same time to complete.

1. The first step in any installation is to read the entire installation manual. Select the appropriate full-size template packed with the unit for exact dimensional requirements for each particular application, then prepare the door and frame accordingly. Note that the door and frame must be properly reinforced to support the unit. If the reinforcing is questionable, fasten using threaded inserts in the header and sex nuts in the door.

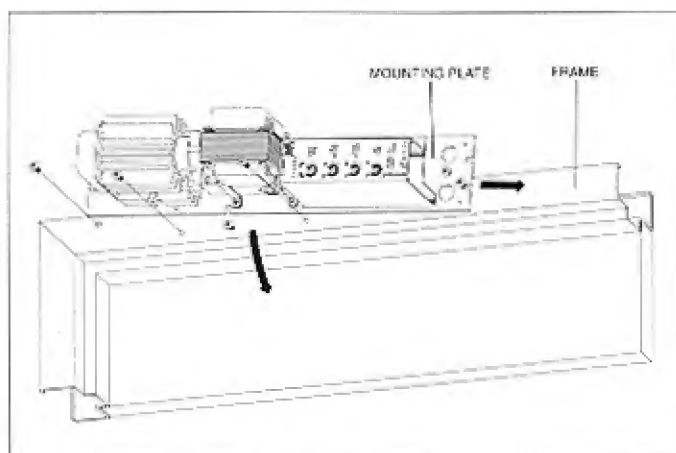
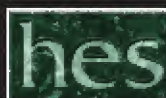
2. Remove the four cover screws and the cover, then loosen the end cap screws and slide the end caps off. (See illustration 2.)

3. The ED 800 features a specially engineered mounting plate designed to permit installation by a single



2. Remove the cover and end caps.





3. Install the mounting screws.

person despite its 35 pound weight. The mounting plate has slots rather than holes, permitting the unit to be suspended overhead from two mounting screws while the fasteners are engaged. Initially install these screws as indicated in illustration three, allowing approximately 5/16" between the screw head and the frame. Align the slots in the mounting plate with the screws. Slide the mounting plate over the screws to hold the unit in place until the balance of the screws are installed, then securely tighten all screws.

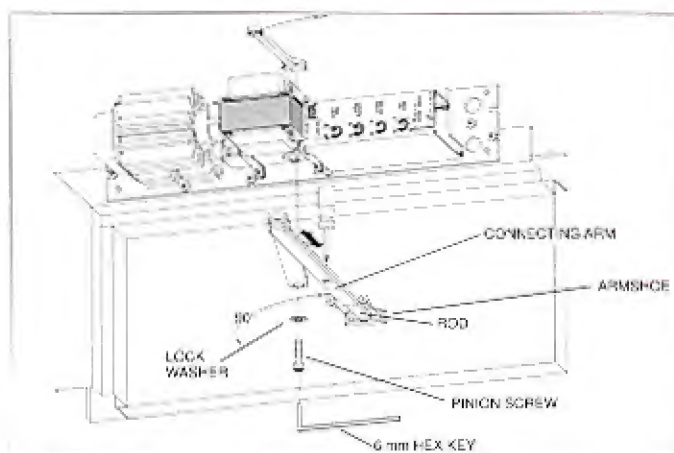
4. Orient the arm as shown in illustration four. Attach the arm shoe to the door. Place a wrench on the top pinion shaft and rotate the pinion slightly toward the latch edge of the door. Slide the arm over the bottom pinion shaft and fasten securely with the pinion screw and lock washer provided. Loosen the screw in the connecting arm so that the arm slides freely. Adjust the connecting arm length so that the rod and connecting arm are 90 degrees to the door. Retighten the screw.

5. Adjust the closer spring tension, only if *additional* closing force is required.

6. Adjust the sweep, latch and backcheck closer valves. (See illustration 5.)

7. Plug in. The unit is equipped with optional power cord, or connect the 120 VAC wires.

8. Wire for the accessory hardware or slave ED 800 using the external connector. Strip approximately 1/8" of insulation from the wire, insert into the connector and secure tightly with a small screwdriver.



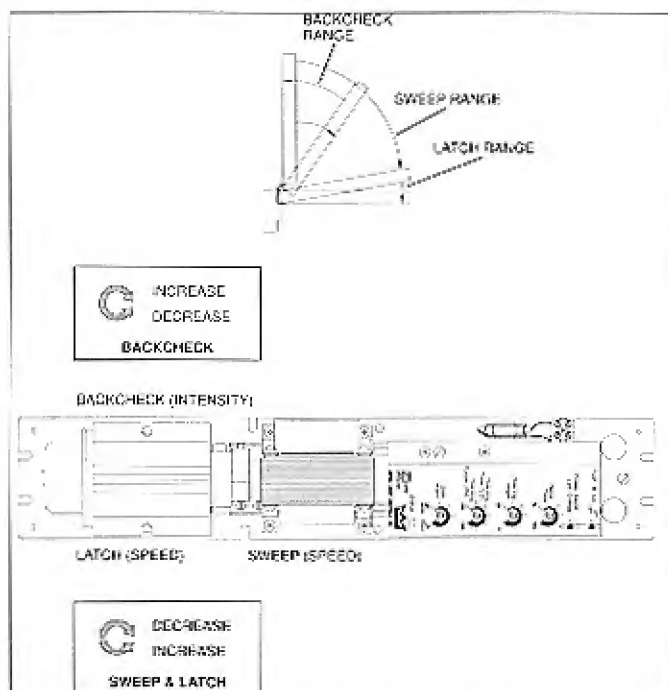
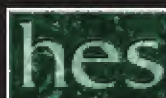
4. Orient and attach the arm.

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5. Make necessary adjustments.



6. Just one of the many external triggers available for the ED800.

9. Adjust the dial marked "Door Width" to correspond to the actual width of the door. Apply power to the unit. The door will move multiple times from the closed position, taking approximately 30 seconds before

returning to the closed position. This action is actually a learning cycle for the microprocessor, which enables the operator to orient itself to the specific conditions of its environment.

10. Make adjustments by setting the "Delay Time," "Opening Angle" and "Opening Speed" controls. (These adjustments can only be made after an actuator has been installed.)

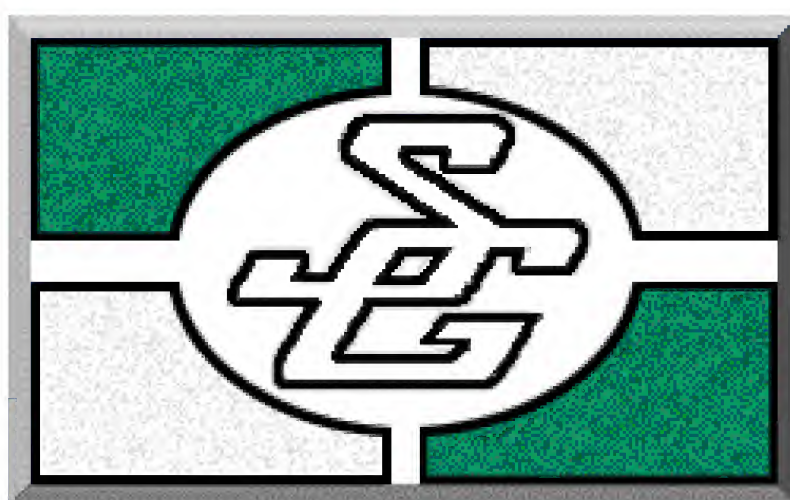
*Continued on page 156*

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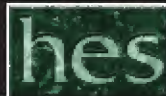
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*Continued from page 154*

#### **Installing Actuators**

The ED 800 can be actuated by a variety of external triggers. Actuating devices available from Dorma include: hard-wired wall and frame switches; radio frequency devices consisting of a radio frequency receiver and choice of wall switch, hand-held, or key chain transmitters, and motion or presence sensors.

Wall or frame switches wired directly to the ED 800 external connector are the most direct means of activating the unit. Wall switches and other actuating devices should be located at a sufficient distance from the door to allow time for the door to open. The normal installation height for wall switches is 32" to 42" above the finished floor. (See photograph 6.)

The ED 800 has an external connector located on the side of the controller module. The connector may be removed to allow easy access to the terminal block screws. When providing wire to the connector (maximum wire size 18 gauge), enough wire should be provided to reach the connector when it is plugged back into the controller.

Both the wall switch and the frame switch operate by an "open trigger" created when a dry, normally open circuit is momentarily closed to signal the ED 800 by making contact between the "Open Trigger" and "Ground."

The wall switch should be mounted in a junction box (box installed by others) or a surface-applied box when supplied with the unit. Once the appropriate box is installed, two wires are run from the switch to the operator and each is connected to one of the switch terminals. The switch backing plate is then attached with the screws provided.

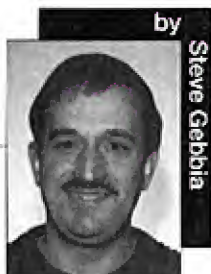
Installation procedures for the other types of actuating devices are similarly straightforward and easy to accomplish.

If you can install a door closer and a simply wired device such as an electric strike... you can install the Dorma ED 800.

*For more information on the ED 800 or other Dorma products, contact a Dorma distributor or Dorma Door Controls, Inc., Dorma Drive, Reamstown, PA 17567. Or call 800-523-8483.*







by  
**Steve Gebbia**

## OSI'S OMNILOCK 50

*"A complete access control center for a single door, the Omnilock 50 includes Master, Submaster, User and Service codes and an audit trail."*

The Omnilock 50 provides electronic access control for a single door. It consists of an electronic module with a keypad paired to a Grade 1 key-in-lever set. (See photograph 1.) There are eleven buttons labeled 1 through 0 and CL (or clear). Normally, the lock operates in a storeroom function with the inside lever free and the exterior lever locked. A valid code is required for entry. Advanced programming functions allow the lock to remain in a passage mode or to restrict access by code to as many or as few users as you wish. The mechanical key bypass, available with a Schlage 'C' keyway or Best type interchangeable core cylinder, will always open the lock.



1. The Omnilock 50 components.

The lock accepts six different types of codes. They are: Master, Submaster, Supervisor, General User, Service, and Audit. The Audit code does not permit entry, it is used with

the optional printer to obtain an audit report listing the last 250 events. Other features include an anti-tamper lockout to prevent guessing a code, battery status indication, variable unlock time delay, time and date stamp for audit reports, and variable group sizing for Supervisor control.

The lock has a one-year warranty against defects. However, it is not designed for exterior applications. Installing this lock where it will be exposed to the elements will void the warranty.

### Installation

The installation is very straightforward. The Omnilock requires a 2-

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1/8" crossbore, a 1" edgebore, and two 7/16" holes for the anti-rotation posts. The standard backset is 2-3/4", but an Arrow H series 2-3/8" deadlatch may be substituted. The electronics are entirely contained in the exterior housing, so there are no extra holes required for motor or circuit board wires. Before beginning installation, record the serial number located on the back of the Omnilock. This will be needed to program the lock.

The outside housing is 6-3/4" high, so you will need to allow for 4-1/2" clearance from the center of the crossbore to the top of the housing. It's a good idea to leave an extra 3" to 4" above this to allow room for the printer and to make it easier to enter codes into the lock. Anything such as a deadbolt which is in this area will need to be relocated and the mounting holes plugged or covered.

The lock will fit doors 1-3/4" to 2" thick and comes from the factory set for a right hand door. The hand of the lock can be changed, but it requires that the lock be disassembled.

To change the hand of the lock, begin by opening the battery compartment cover and removing the batteries. Notice the position of the motor wire connector and then disconnect it from the CPU board. Remove the four Phillips head screws from the lock back plate and remove the back plate by lifting from the middle of the top edge. Remove the lockset from the housing. Depress the lever retainer and remove the outside rose. (See photograph 2.)

Carefully remove the two wire clips which hold the spring cartridge in the rose. (See photograph 3.) Lift the spring cartridge out, reverse it, and re-install it in the rose. Replace the wire clips. There is an arrow indicating the direction of rotation stamped on the spring cartridge. Inside the rose there are two arrows, one indicating left hand rotation and one indicating right hand rotation. Compare the arrow in the rose to the one on the spring cartridge to verify proper handing. Change the hand of the inside rose in the same manner.

Before re-assembling the lock, adjust for door thickness. For 1-3/4"

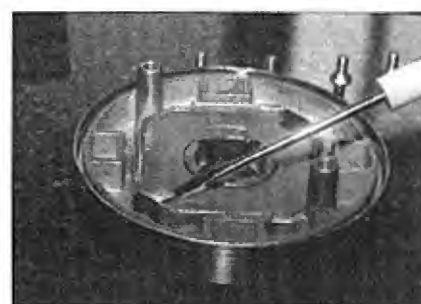


2. After removing the backplate, the lockset is removed from the housing and the outside rose is removed from the chassis.

doors, the short mark should line up with the edge of the lock chassis. For 2" thick doors, adjust the nut until three threads are exposed on the outside spindle. (See photograph 4.)

Reassemble the lock in reverse order. Make sure that the lower anti-rotation post is located toward the side of the lock that engages the latch.

To locate the holes for the anti-rotation posts, begin by drilling your crossbore and edgebore. Then install



3. Removing the spring cartridge.

the latch unit. Insert the Omnilock from the outside of the door and install the inside mounting plate and nut.

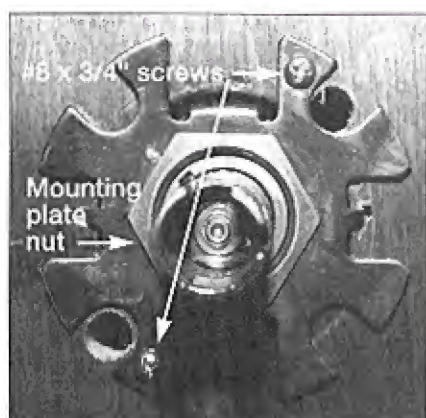
Now align the template with the mounting plate being sure that the flat edge of the template faces the edge of the door. Mark the locations for the two 7/16" holes. Repeat this procedure on the outside of the door. Remove the lock and template. Drill halfway from each side of the door to prevent damaging the surface of the door.



4. Adjusting for the correct thickness door.



Continued from page 158



5. After drilling, reattach the inside mounting plate with the mounting plate nut and the two #8X3/4" screws.

Insert the lock into the crossbore making sure that the latch engages properly. Install the inside mounting plate and nut. Tighten the nut using the plastic wrench provided with your lock. Install two #8 x 3/4" screws to secure the mounting plate. (See photograph 5.)

Slide the inside rose over the spindle, and depress the inside lever retainer to allow the rose to slide past. Secure the rose to the anti-rotation posts with machine screws, making sure that the rose sits flat on the door. (See photograph 6.) To install the escutcheon, align the dimples with the slots on the side of the rose, push straight in, and turn clockwise.

Install the cylinder in the outside lever and install both inside and outside levers. Install the strike plate and test the operation of the lock. (See



6. Fastening the inside rose.

photograph 7.)

The factory code for the lock is the lock's serial number. Enter this code. The Green light should flash three times and the lock should unlock. After five seconds, it should relock.

#### Access Levels

The lock normally operates at access Level 2 (Code Required). While in the program mode, this can be changed to Level 1 (Unlocked), or Level 3 (Shutdown). In Shutdown mode only the Master code will operate.

#### Programming The Omnilock

There are sixteen commands which control the programming and operation of the Omnilock. Each command has a unique two digit code which is used to call each command.



7. The Omnilock 50 installed.

The command code number is also the ID number of each user, which is used when printing an audit trail. (See table 8, Listing of the Command Codes.)

Programming the Omnilock is relatively simple and involves the following procedure:

1. Enter Master or Submaster code.
2. Press and hold the CL key until LED's light.
2. Enter two digit command code or ID number.
3. Enter new operating code.
4. Press and hold the CL key until the LED's flash.
5. Enter command code 00 to end session.

Once a Master or Submaster code has been entered you must start programming before the unit relocks. To allow yourself more time to enter the codes, press the CL key before the lock relocks. Once in program mode, the Omnilock remains unlocked for one minute after the last key pressed. This allows additional time to enter the codes.

When you are finished, enter the command code 00 (end program session) and the unit will relock. This is not necessary, but if you don't use



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00	<b>END PROGRAM SESSION</b>
01-50	<b>USER/ SUPERVISOR.</b> Access at Level 2 only (code required). User codes are arranged into four groups, the size of which can be varied (command code 93). Any user can be designated as a Supervisor and can then allow or restrict access to all members of his/her group.
51	<b>SERVICE CODE.</b> Intended for someone needing access for a limited time only. (See command 94)
52	<b>SUBMASTER CODES.</b> All the functions of the Master code except they cannot change the Master code, program other Submaster codes, or set the access level to shutdown. Up to three Submaster codes are allowed.
55	<b>MASTER CODE.</b> Controls all functions of the lock. It can be from 4 to 7 digits long. Changing the length of the Master code will erase all other codes because all codes must be the same length as the Master code. In order to program the lock for the first time, the Master code must be changed from the factory code.
56	<b>AUDIT CODE.</b> Used to print out a list of the last 250 events. It does not allow access.
90	<b>ACCESS LEVEL.</b> Used to set the level of access.
91/92	<b>ENABLE/DISABLE GROUPS.</b> Sets groups of User codes to supervised or unsupervised. When supervised, all codes within the group operate. An unsupervised group allows only Supervisor codes to operate.
93	<b>GROUP BOUNDARY.</b> Determines what codes belong to what group.
94	<b>SERVICE CODE TIME.</b> Sets how long the Service code operates from the time it is first used.
95/96	<b>SET DATE/ TIME.</b> Used to put a date and time stamp on the audit report.
97	<b>OPEN DELAY.</b> Sets the length of time (from 1 to 30 seconds) the lock remains unlocked after a code is entered.
98	<b>REPORTS.</b> When in program mode, sends reports to the printer listing the status of the lock (including battery usage and access levels for each group) or a list of all codes in the system (listed by group).
99	<b>PRINTS LIST of COMMANDS.</b>

Table 8. Listing of the Command Codes for the Onnilock 50.



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this command, the Omnilock will remain unlocked for an additional minute.

Omnilock has an printer available which, in addition to its ability to generate an audit trail, will aid in programming the lock. However, it is entirely optional. The two LED's on the top of the lock indicates the status of any command or code entered into the lock.

During programming, the green LED flashes once every time a key is pressed. A single long green flash indicates a command has been accepted. When a Supervisor, Submaster, or Master code has been accepted, the green LED flashes twice.

The red LED indicates that the command was not accepted. Two red flashes indicate that a parameter (such as a time limit) was not valid.

#### **A Sample System**

Here is an example of a system which might be used for a facility requiring 14 users to have access.

<b>Code Type</b>	<b>ID Number</b>	<b>Code</b>
Master code	55	5123
Submaster 1	52	3123
Submaster 2	53	3124
Submaster 3	54	3125
User	01	1121
User	02	1122
User	03	1123
User	21	1221
User	22	1222
Supervisor	23	1223
User	31	1321
Supervisor	32	1322
User	33	1323
Service	56	3127
Audit	51	3128

To program this system we must start by changing the Master code. To do this enter the serial number of the lock, the clear button, the ID number, the new Master code, the new Master code (again), and the clear button.

The sequence for the lock in this article using the Master code in our sample system above looks like this:

100474 - CL, 55 - 5123 - 5123 - CL

The green LED should flash three times to indicate that the new Master code has been set and it is a different length than the old one. A single green flash means that the new Master code was accepted and is the same length as the old one. Two red flashes shows the code is already in use. Three red flashes mean the second set of numbers do not match the first - the code was not changed.

The Master code must be entered twice to verify proper entry. Other codes need only be entered once.

Entering the new Submaster codes is done in a similar manner. Since the unit has not relocked, we are still in the program mode and do not have to re-enter the Master code. To enter the Submasters, simply enter the ID number, the Submaster code, and then the clear button. Our sample

*Continued on page 164*



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***Exit Devices.***

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**Continued from page 162**

looks like this:

52 - 3123 - CL, 53 - 3124 - CL, 54 - 3125 - CL, 00.

All three Submaster codes are now set, we have exited the program mode, and the lock has relocked.

Now we will use the first Submaster code to program in the new User codes. Again, using our sample, the entering the user numbers look like the following:

3123 - CL, 01 - 1121 - CL, 02 - 1122 - CL, 03 - 1123 - CL, 21 - 1221 - CL, 22 - 1222 - CL, 31 - 1321 - CL, 33 - 1323 - CL, 00.

All User codes are now set.

A Supervisor code is entered the same way as a User code except that the CL key is held after the green LED lights once until it lights two more times. If the code is in use already, you receive two red flashes.



9. Retrieving an audit trail using the portable printer.

To enter the Audit code: 3123-CL, 51-3128-CL, 00.


Other features we can program include the date, time, and unlock delay time. These are entered using the same procedure as entering the other codes after programming has been entered using the Master code.

#### Printer

The optional printer prints out a list of the last 250 events after entering the audit code while holding the printer a few inches above the left side

of the lock. (See photograph 9.) While in program mode you can also receive reports showing the locks status or a list of all codes (listed by group).

The programming guide contains a great deal of information and can be overwhelming. Read it carefully, then read it again until you are very familiar with the many advanced features of this lock. To make things easy for you, there is a quick reference card included with the lock which lists the command codes. Once you understand the system, programming isn't as complicated as it might seem. Because of advanced features such as an audit trail, time-limited service code, and the ability to customize the lock to your customer's needs, the Omnilock 50 is an economical alternative to expensive card access systems.

For more information on Omnilock series access control units, contact OSI Security Devices at 657 N. Pastoria Ave., Sunnyvale, CA 94086, or call (408) 720-0909. 



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# TECHNITIPS

## Helpful hints from fellow locksmiths

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tips and win.

### HOW TO ENTER

Simply send in your tip about how to do any aspect of locksmithing. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Write your tip down and send it to: *Jake Jakubowski, Technitips' Editor, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.* Remember, tips submitted to other industry publications will not be eligible. So get busy and send in your tips today. You may win cash or merchandise. At the end of the year, we choose winners for many major prizes. Wouldn't you like to be a prizewinner in 1994? Enter today! It's easier than you think.



by  
Jake Jakubowski

### BEST TIP OF THE MONTH

If your tip is chosen as the best tip of the month, you'll win \$50 in cash! Plus, you may win one of the large year end prizes!

### EVERY TIP PUBLISHED WINS

Yes, every tip published wins a prize. If your tip is printed, you'll win \$25 in Locksmith Bucks. You can use these bucks to purchase any books or merchandise from *The National Locksmith*. Plus, every tip published will win a copy of the Technitip Handbook.

## These Prizes Awarded Each Month!

- All-Lock A 7000 VATS Decoder
- HPC Pistolpick
- Silca Rubberhead Keyblanks (100 Blanks)
- ESP PR-13 Professional Lock Pick Set
- Sieveking Products EZ-Pull GM Wheel Puller
- Technitips Handbook

*Submit your tip and win!*

**M**an, here we are with the July Technitip column already! That means that we have less than 6 (S-L-X) months before we begin our year-end drawing for some really terrific prizes.

The good news is: You still have a chance to qualify for the the year-end prizes. BUT! You have to send me your tips .... NOW!

### July's Best Tip Drilling Glass Relocker

Just recently, I came upon my first glass relocker on a safe that I had to open. The keyed day lock had malfunctioned and when I removed the escutcheon from the front of the safe and removed the key guide tube, I looked in the keyway and saw the glass relocker shining darkly around the hole that the key guide tube passed through.

Going deeper with my scope, I looked the lock over and thought the easiest thing (If it weren't for the glass relocker) would be to drill the levers out and fish the bolt back.

However, drilling to destroy the levers would be chancy since the possibility of the bit binding and causing the drill to buck were pretty good. If the drill caught and hit the relocker just right.

I needed some way to be able to drill the levers and yet protect the relocker from being set off. Compounding my problem was the fact that the hole I had to work in

was only about 3/8" in diameter and about 4" deep!

I solved my problem by getting out my HPC three piece follower set. I found that the next to the largest follower fit nearly perfectly (it was slightly tight and a little WD40 allowed it to slide into place). (See illustration 1.)

Using a 1/4" twist bit, 6" long allowed me to drill away the levers

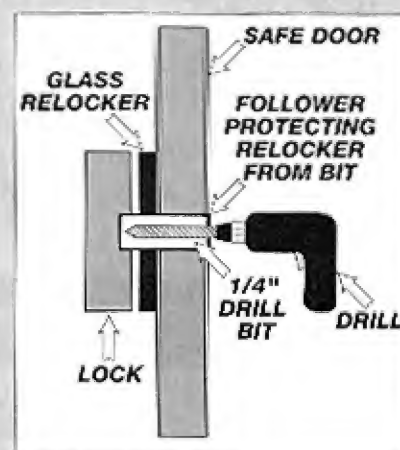


Illustration 1



so I could fish back the locking bolt. However, the real surprise came after I got the door open. All I would have had to do was punch the the back off the lock, which would have taken the levers with it. Even so, the next time I run into a glass relocker, I'll probably still get out my HPC follower set ... just to be on the safe side!

Sven Olafson  
Virginia

**All-Lock VATS Decoder Winner  
Master Cylinder Car Opener**

You never know where you can find something that will make your job a little easier, and not cost you anything except the time it took you to realize that these opportunities turn up in the most unlikely places.

In this case, I found an opening tool in the local junkyard while I was looking for something else entirely. This tool is the retaining wire that keeps the top of a brake system's master cylinder firmly in place. (See illustration 2.)

I found that this retainer is almost the perfect tool for opening the wing windows on Ford pickups and vans. Just slide the tool between the rubber gasket and the bottom of the wing window and manipulate it into place.

One leg of the tool will pull the lock button in (thus, releasing the lock) and with just a slight twist of the wrist, the other portion of the leg will flip the handle upward. Then, just push the

window in, reach inside the cab and open the door!

I've also found that this tool will work on other vehicles besides Ford that have wing windows with the lock on the wing window itself. A little lubricant wiped on the tool helps ease it between the gasket and window frame.

Larry MacLemore  
Colorado

*Editor's note: Larry sent me one of his tools and I've got to tell you, it works just great. I tried it on my Dodge van, and a customer's Ford pick-up. I like the idea well enough that I'll keep one in my opening kit.*

**HPC Pistol Pick Winner  
Broken Honda Key**

I have found that some older Honda ignition locks will become stuck in the start position. And because the key was badly worn, the customer is able to remove it from the ignition, but not get it back in to turn the ignition to the OFF position.

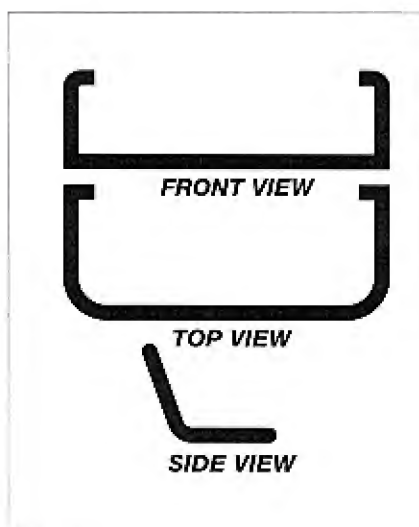


Illustration 2



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Trying to pick the lock back to the LOCK position was hindered by the pressure of the return spring (the spring that brings the switch back from start to run), which was too great to allow picking.

The way I have overcome this problem is to use a tension wrench to apply clockwise pressure to this spring. Then as I begin to pick the ignition, I allow the spring to slowly come counter-clockwise. This counter-clockwise pressure then acts as your tension wrench and will allow you to bring the lock to the RUN position.

Once in the RUN position it's a simple matter to bring the cylinder around to the LOCK position. Code cut the customer a new key and your finished. By the way, I've found that this will also work on other imports that exhibit this same problem.

J. W. Stokes  
California

*Silca Rubber Head Key Blanks Winner*  
**American Padlock Repair**

My shop sells a lot of American 700

and 701 padlocks. As these locks become older and well used, the soft metal roller pin that holds the shackle in wears out and allows the shackle to come out. To repair the lock, the broken or worn roller pin must be removed and a new one put in.

However, to remove the roller pin, you must first remove the 5/16" x 1/4" hardened steel retaining pin. (See *illustration 3*.) Trying to drill this hardened pin can be very frustrating. Here's how I solved this problem:

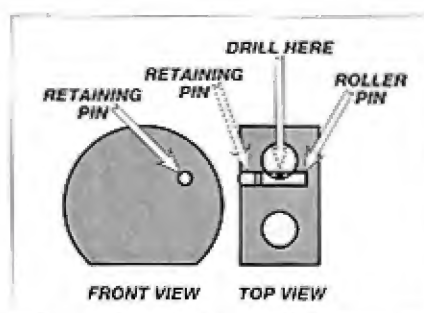


Illustration 3

Looking through the shackle hole, you can see the roller pin. Using a small center punch, punch the roller pin and then use a 3/16" drill to drill a

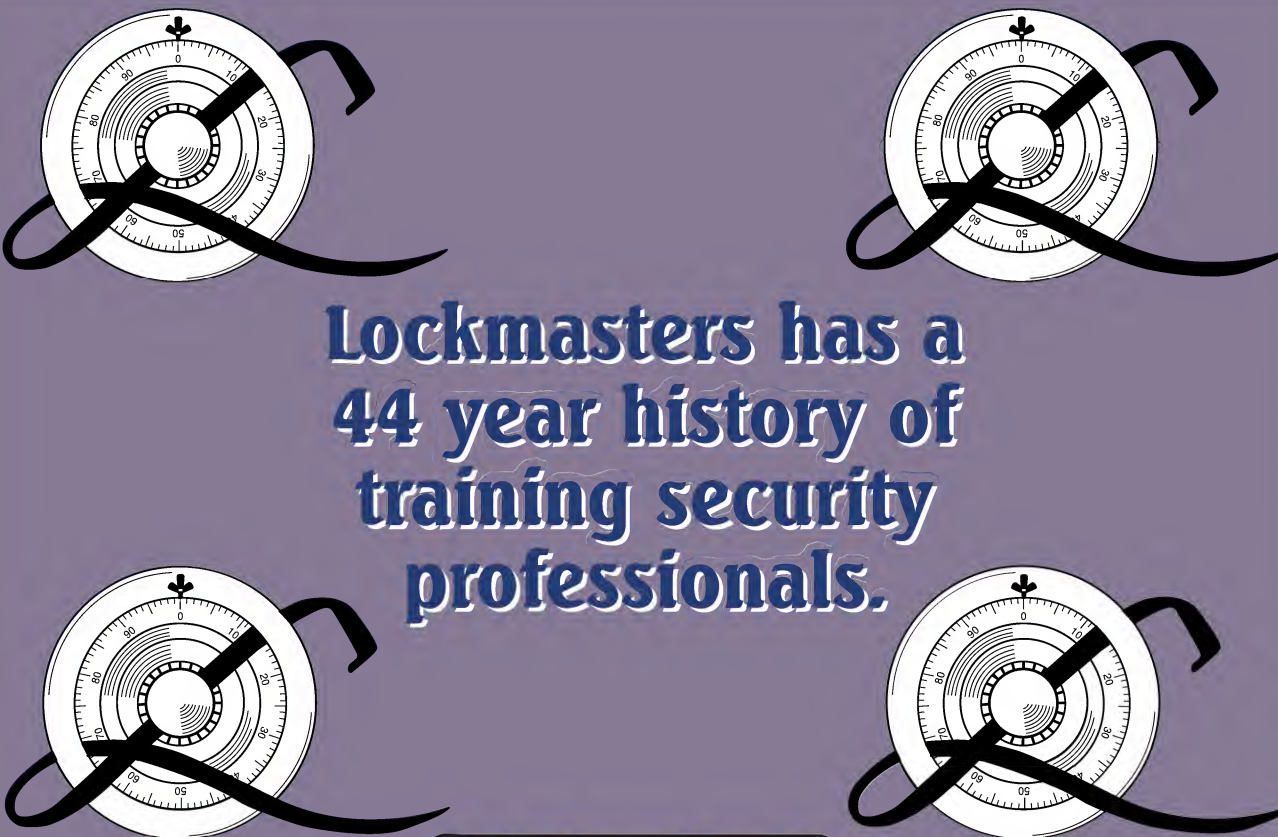
hole completely through the roller pin. Then punch the retaining pin inward. Again, mark and drill through the roller pin and punch the retaining pin inward so the two pieces are driven together. Continue this process until the retaining pin falls inside the lock case. The pieces of the roller pin will fall inside also.

Insert a new roller pin with the shackle and the shackle spring. Then use the same retaining pin to plug the hole in the back of the lock case. Your lock is repaired.

Jose Carmona III  
Puerto Rico

*E-Z Pull Gm Wheel Puller Winner*  
**Converting American Padlock To Key Retaining**

A large timber mill that uses roughly 300 American 1105 and 700 padlocks wanted me to come up with an answer to their problem of missing padlocks and employees leaving locks unlocked. They would not authorize me to obtain the American 1105 with a key retaining feature, so I came up with this idea instead.



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It's a fast, easy way to convert an American (series 700 and 1105 ) to a key retaining feature that takes only a minute or two to complete.

First drill a 1/16" hole in the back of the plug, 1/8" from the top edge and 1/16" from the side edge, 1/4" deep.

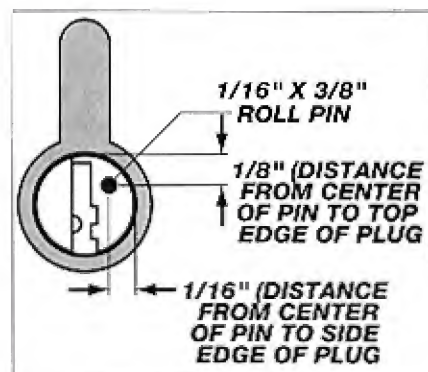


Illustration 4

Then insert a 1/16" x 3/8" roll pin in the hole you've just drilled. (See illustration 4.) You now have an American padlock that is both key retaining and rekeyable.

Sean O'Malley  
Canada

#### ESP Lock Pick Set Chrysler Trunk Lock Tool

Like many other locksmiths, I am constantly looking for the right tool. Well, after many cut hands and fingers working to remove Chrysler/Plymouth deck locks, I think I have found it.

It is the Snap-On Tools inner tie rod tool (Part #61100, about \$20). It is 15-1/8" long and has a 1-5/16" socket at the working end, and a 1/2" drive hole.

After removing the screws that retain the lock assembly, the tool fits right over the nut and shaft. You can remove the nut easily and without a cut or a curse.

I used our engraver to etch loads of tiny swirls all around the shaft of the tool to allow a good grip. It ends up looking like the etched finish on a MAG flashlight. Engraving the grip on the shaft allows me to remove and reinstall most of the retaining nuts without using a 1/2" drive.

William B. Newns, Sr.  
Pennsylvania

#### Technitip Handbook Winner Master Padlock Tension Wrench

I made a tension tool for picking Master-type padlocks that I think makes the job easier.

Using an old Allen wrench (small size), I flattened the short end of the wrench so it would fit snugly in the keyway. The tool should fit so that no part of it touches anything except the keyway. This provides clean, even tension on the plug with no drag on the plug case.

Regular tension wrenches are not thick enough to stay in the keyway without dragging on the case which hinders your feel for picking. Try it.

J. W. Stokes  
California

#### Locksmith Bucks Winners Honda And Schlage Lock Opening

Here are two quick tips I hope will help someone.

A really neat way to unlock (and at the same time impress your

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customer) Hondas and Acuras that use unidirectional wafers in the the door locks is to sight read the wafers and cut a key. Even if you are not highly skilled at wafer reading, these locks are easy; and are good ones to learn on.

The reason these locks are so much easier then others is because there are only 6 wafers and 3 depths with a .028" differential. Making your sight reading even easier is the fact that the #2 wafers are silver colored and the #1 and #3 wafer are brass colored! Even a novice sight reader should be able to generate a key in about two or three minutes.

Cut the key only on one side and give it to your customer, telling them that this special key will unlock the door, but will not operate the ignition. Sure, you can open these cars quicker with a tool, but this looks more professional and impressive.

Next, here's a quick way to open Schlage F series knob sets when the customer's key will not work (slipped spring retainer, jammed tumblers, etc.). Put a six pin (SC-4) blank in the

lock and as you apply light turing pressure with your hand on the knob, use a small hammer to repeatedly and rapidly lightly tap the bow of the blank until the knob turns.

What you are doing is momentarily bouncing back the locking pins allowing your hand to turn the knob. There is a certain amount of feel involved and a little practice at home before trying this in front of the customer wouldn't hurt. This method does not unlock the knobset it just trips it.

Pete Gamble  
North Carolina

#### Installation Tips

When drilling holes for a lockset or deadbolt it is important to drill straight and level. To help you do this, buy a bubble level at your local hardware store and attach it to the top of your drill. As you drill the hole, just keep the bubble in the circle.

Also, (especially if you don't have a boring jig) when you tape the lock

template to the door, use a small combination square and level to ensure the template is level on the door.

David Weaver  
Alabama

#### Schlage Knobset Tool

When you don't have a key, or can't pick the lock, and have the knob off the door, here's a way I've discovered to get the knob off a Schlage A53PD or D53PD.

Take a piece of copper tubing 6" long and 3/8" diameter and flatten one end so it will just slide over the tailpiece, after partially disassembling the lock. (See photograph 5.) About 2" from the other end, bend the tube 90 degrees for a handle. Use this as a turning wrench.

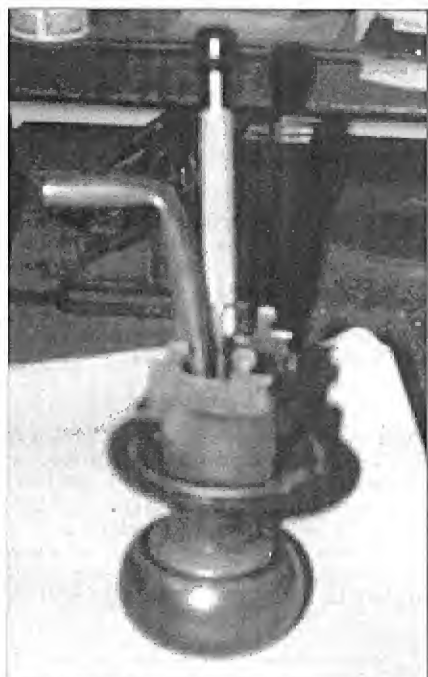
Depress the spring loaded pin that prevents the retainer from moving and gently turn the tailpiece while slightly withdrawing your awl. If you time it just right, you can turn the tailpiece far enough to depress the knob

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15. A Schlage knobset tool.

retainer and remove the knob for service.

Dana Prouty  
Massachusetts



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## WIRE IT RIGHT

*Continued from page 51*

wiring (especially other signal wires), florescent lighting or antennas.

Many devices (Alarm Lock's Trilogy, for example) require that portions of its wiring be wrapped around a ferrous ring. Do not ignore this rather unobtrusive device. It is meant to stop RFI and ESD that can inhibit proper operation or destroy the device. In fact, if there is ever an expected RFI or ESD problem, this technique or looping the wire can save the locksmith from both lost time and money from call-backs.

While most access control work and wiring does not demand that the locksmith have a degree in electricity, it is imperative that he be able to identify circumstances and conditions that require a higher degree of understanding and experience. And, when faced with them, either acquire the necessary understanding and experience through training or school, or refer the work to a locksmith more experienced in this area. 



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# SHOP TALK

## Helpful questions and answers

*Shop Talk* answers readers questions on any locksmith related topic. Only letters judged to be of general interest will be published. We regret that we cannot answer individual letters. Because of the volume of mail, only those questions answered in the magazine will receive answers. Send your questions to *Shop Talk*, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.

**Q:** *How is a door shimmed open?*

*Ed Hamm  
Illinois*

**A:** There are many ways to enter through a locked door, Ed. As locksmiths we have various tools and techniques at our disposal, with

picking receiving the most notoriety, mystique and serving as the benchmark of our trade.

One method that seems to have made it big on the silver screen, however, is the use of a credit card to shim back the lock's latch. This technique is really quite simple. From the push side of the door, a thin card is slipped between the door jamb and the door, in line with the latch. As the card is pushed, the ramp of the latch caused the latch to ride up onto the card and out of the strike. Voila, the door is open.

From the pull side of the door, the latch is often visible and can be retracted with a small screw driver,

knife or similar tool.

The ease with which this is accomplished prompted manufactures to include a "deadlatch" function to keyed locksets. This is the little button that rides on the back of the larger ramped latch. Ideally, when a door is shut the latch falls into the strike hole and the deadlatch is depressed and rides on the strike plate. At this point the latch is deadlocked and cannot be depressed by shimming. When the door is not closed the deadlatch button is not depressed and the latch can be depressed with the hand.

Where there is an improperly installed or misaligned strike, the

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deadlatch button often falls into the strike hole with the latch. When this occurs, the latch can be depressed by a credit card or other similar object.

One opening method often used in burglary is the use of the carjack. By placing the carjack in the frame, it is used to spread the frame open enough to release the latch from the strike, letting the door swing open.

One of the most effective methods for preventing door shimming is to install a deadbolt with at least a 1" throw onto the door. Latch guards can also be used to prevent a direct attack on the latch.

**Q:** The National Locksmith has been printing portions of the 1994 GM codes (the GM ten-cut system) starting in the February 1994 issue. It states that the Continental Code Card #215 card is needed.

*My distributor tells me that Continental has not even thought of making a code card yet, and when they do it may not be the #215. Either way, I'm without a code card. What's the story?*

Vincent Chestnut  
Massachusetts

**A:** I like getting the story straight from the horse's mouth when I can. So, I contacted Continental Micro and asked.

It should be noted first that Continental knew of the coming changes to the 1994 GM's long before it was known by the locksmith trade, and, yes, a card has always been in the planning. It's number is going to be XF215 when it is released.

At this time, however, an exact release date is not known. The reason? As most Continental Card users know, the cards include much more than just spacing and depth information. Applicable code series; vehicle year, make and model; keyblank applications; tumbler placement; as well other miscellaneous (and important) information are included on each card.

Changes and additions to the 1994 GM ten-cut system is not yet complete but should be soon. At this time a card will be released, and we'll be the better for waiting.

Until then, Vince, use the Universal Micrometer Card #58 and the spacing and depth information provided with the codes.

**Q:** I'm just starting out in locksmithing and need to know where I can get tools and supplies. Any suggestions?

Frank Raffetto  
Florida

**A:** Welcome to locksmithing, Frank. I think you'll find our trade is largely distributor oriented. When a tool or product is needed, most often we turn to a distributor to get what we need, although there are many manufacturers of specialty tools that still deal direct.

To locate a distributor, I suggest you obtain *The National Locksmith's* year end directory issue. This issue lists the names and phone numbers of all the manufacturers, distributors, associations, and schools in our trade, and comes out in the December issue of every year. If you just started receiving *The National Locksmith* you may order a back issue (provided they are still available) by calling us at 708-837-2044, or check the Distributor Digest listings in this section of the magazine.



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# TEST DRIVE



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## KEEDEK K-VATS

**PRODUCT:** Keedex K-VATS Micro VATS Interrogator by Keedex Mfg. Available from Keedex distributors for about \$59.95.

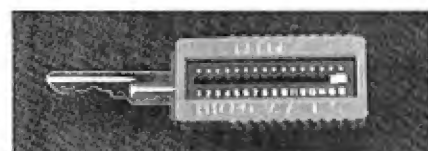


1. The Keedex K-VATS Micro VATS Interrogator.

**PRODUCT DESCRIPTION:** The K-VATS Micro V.A.T.S. Interrogator is a compact slide switch used in generating keys for the General Motors VATS equipped vehicles.

The unit is comprised of a miniature slide switch offering the VATS key values 1 through 15. A small button slides along 16 possible positions. Positions 1 through 15 are the VATS key value. Position 16 is neutral.

Two contacts extend out from one end of the switch. These contacts straddle the bow of a working mechanical key and make contact with the ignition switch contacts.



2. The contacts of the Interrogator straddle the bow of the mechanical key.

**FRIENDLINESS:** While they are provided, no instructions are really necessary for any locksmith familiar with GM VATS key generation.

**FEATURES:** To make a key for a VATS vehicle a mechanical key is first used. Because the resistor contacts are part of the Interrogator unit, there is no need to purchase specialty keys, a definite advantage to the locksmith.

After placing the mechanical key into the ignition, the Interrogator is placed over the bow of the key, allowing the contacts of the Interrogator to meet the contacts of the ignition.

A VATS key value is selected by sliding the switch to the desired position. Due to its linear construction, it is easier to start at one end or the other to prevent losing count of the next value to be tried. Remember, position 16 is neutral and does not have a VATS value.

With the Interrogator in place, turn the ignition switch. If the vehicle does not start, wait the 4 minute delay period before switching to the next VATS value. The unit does not come with a



3. The key and Interrogator inserted into an ignition.

**DESCRIPTION:**  
Miniaturized VATS decoder.

**COMMENTS:**  
Inserts directly into ignition.

**TEST DRIVE RESULTS:**  
Quite small and economical. Uses a mechanical key rather than an adapter key for decoding. You'll want one in your toolbox.



4. The Keedex label attached to the Radio Shack Micronta 22-212B VOM makes an inexpensive tool for determining the VATS value of an existing key.

timer. It is, therefore, necessary to use a watch or the vehicle's clock.

When the vehicle starts, the number indicated on the Interrogator switch is the VATS value of the key needed for the vehicle.

For determining the VATS value of an existing key, Keedex has included labels that can be attached to face of an analog volt/ohm meter. The label with the Keedex logo is designed to be used with the Radio Shack Micronta 22-212B VOM (approximately \$15.00). This is a nice touch.

**COMMENTS AND SUGGESTIONS:**  
While not a total diagnostic tool, the simplicity and cost of this tool leaves little room for improvement for locksmiths who are concerned with VATS key generation.

While a timer would be a nice addition, the size and cost may not justify such an addition.

**CONCLUSION:** The Keedex K-VATS Micro VATS Interrogator is a worthwhile and inexpensive addition to the automotive locksmith's bag of tricks.

